

AMERICAN BEE JOURNAL

GEORGE W. YORK,
Editor.

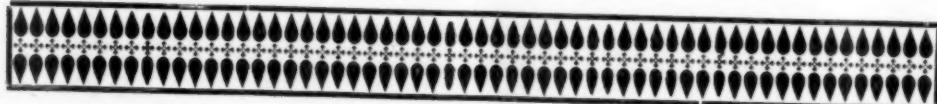
CHICAGO, ILL., JUNE 5, 1902.

FORTY-SECOND YEAR
No. 23.



VIEW OF THE APIARY AT THE CENTRAL EXPERIMENTAL FARM, OTTAWA, ONT., CANADA,
WITH HOUSE-APIARY AND WORKSHOP ON THE RIGHT.

(See page 356.)





This is our Famous Catalogue. It can be found in over two million homes of thinking people. Is it in yours?

CATALOGUE NO. 70 IS NOW READY. Over 1000 pages packed with the good things of life—everything you use—gathered by our buyers from the markets of the world. Page after page of high grade merchandise, all illustrated and honestly described.

SEEMS TO US THAT YOU OUGHT TO HAVE A COPY. We want you to have one—so much so that we will furnish the book free and pay one-half the postage if you will pay the rest, fifteen cents. There are so many people in this country bubbling over with curiosity, or trying to get something for nothing, that we are compelled to make this trivial charge. It is only fifteen cents but it assures us that you are acting in good faith and are interested in our business. Why not ask for it today, before you forget it?

Montgomery Ward & Co., Chicago

Please mention Bee Journal when writing



PUBLISHED WEEKLY BY

GEORGE W. YORK & COMPANY
144 & 146 Erie St., Chicago, Ill.

Entered at the Post-Office at Chicago as Second-Class Mail-Matter.

EDITOR—George W. York.
DEPT. EDITORS.—Dr. C. C. Miller, E. E. Hasty.
SPECIAL CORRESPONDENTS—G. M. Doolittle,
Prof. A. J. Cook, C. P. Dadant,
R. C. Aitkin, F. Greiner, Emma M. Wilson,
A. Getaz, and others.

IMPORTANT NOTICES.

The Subscription Price of this Journal is \$1.00 a year, in the United States, Canada, and Mexico; all other countries in the Postal Union, 50 cents a year extra for postage. Sample copy free.

The Wrapper-Label Date of this paper indicates the end of the month to which your subscription is paid. For instance, "dec01" on your label shows that it is paid to the end of December, 1901.

Subscription Receipts.—We do not send a receipt for money sent us to pay subscription, but change the date on your wrapper-label, which shows you that the money has been received and duly credited.

Advertising Rates will be given upon application.

Please mention Bee Journal when writing advertisers.



FOR GETTING NEW SUBSCRIBERS.

Red Clover Queens
FOR 1902 FREE!

Long-Tongue Variety—Warranted Purely Mated

We have arranged with the queen-breeder who furnished Long-Tongue Red Clover Queen for us during the season of 1901, to fill our orders this season. Although fully 95 percent of the untested queens he sent out were purely mated, this season all that he mails for us will be **warranted** purely mated.

We want every one of our present subscribers to have one or more of these money-maker Queens. We have received most excellent reports from the queens we supplied last season. And this year our queen-breeder says he expects to be able to send out even better Queens, if that is possible. He is one of the very oldest and best queen-breeders. His bees average quite a good deal the longest tongues of any yet measured. The Breeder he will use is direct from Italy, having imported her himself. Her worker-bees are large, of beautiful color, very gentle, scarcely requiring veil or smoke.

Orders for these fine, "long-reach" Warranted Queens will be filled in rotation—"first come first served"—beginning as early in June as possible. It is expected that orders can be filled quite promptly (even better than the past season), as a much larger number of queen-rearing nuclei will be run. (But never remove the old queen from the colony until you have received the new one, no matter from whom you order a queen).

All Queens will be guaranteed to arrive in good condition, and will be clipped, unless otherwise ordered.

A Warranted Queen for Sending us only TWO NEW YEARLY SUBSCRIBERS.

In order that every one of our subscribers who wants one of these Warranted Queens this season can easily earn it, we will book your order as follows:

No. 1.—For sending us the names and addresses of **two new subscribers** to the American Bee Journal and \$2.00, we will mail you ONE of these queens free.

No. 2.—Or, for sending us **one new subscription** at \$1.00, and 30 cents more (\$1.30), we will mail you a queen, and the Bee Journal for one year to the new subscriber.

No. 3.—Or, send us \$1.60 and we will send to you the Bee Journal for one year, and also a queen.

This indeed is an opportunity to get a superior Queen, and at the same time help swell the list of readers of the old American Bee Journal.

We are now ready to book the Queen orders, and also to enroll the new subscriptions. Remember, the sooner you get in your order the earlier you will get your Queen. We hope that every one of our present readers will decide to have at least one of these Queens. Address,

GEORGE W. YORK & CO.,
144 & 146 Erie Street, CHICAGO, ILL.

AMERICAN ESTABLISHED IN 1861 BEE JOURNAL

THE OLDEST BEE-PAPER IN AMERICA

42d YEAR.

CHICAGO, ILL., JUNE 5, 1902.

No. 23.

Editorial.

Ho, for Denver!—There seems to be much enthusiasm among Western bee-keepers with regard to the convention to be held September in Denver. They have had excellent local conventions in that region, and with the addition of others from outside it is likely to be one of the most notable National conventions ever held.

Honey by Mail.—It seems a little strange to us Americans to see in the British Bee Journal mention made of improved boxes for sending sections of honey by mail. We couldn't afford it in this country, but, with all our boasting, Johnny Bull is away ahead of us with his "parcels post" to send things cheaply by mail.

Pear-Blight and Bees.—The Pacific Rural Press contains a report from Charles Downing, who covered trees with netting to note the result. He seems to conclude that the bees are responsible for much of the damage, if not all, estimating his loss on his crop of Bartlett pears last season, due to blight, at \$10,000, and his loss this season up to the time of the report, at not less than 1000 tons of fruit on 9000 trees. Just how the discrepancy between his view and the views of others can be accounted for remains to be seen.

Sweet Clover in Ohio.—A bill was introduced in the Ohio legislature intended to kill sweet clover in that State. Instead of sweet clover being killed, it seems that the bill itself was killed, according to the following item from Gleanings in Bee-Culture:

The iniquitous sweet-clover bill that was introduced in the Ohio legislature has been killed, and killed so dead that I hope no succeeding legislature will try to pass another measure like it. This only illustrates that bee-keepers, when they are united, and write to the members of their legislature, can exert a powerful influence. If it had not been for the bee-keepers of New York the new anti-adulteration honey law would not have been passed.

Bees Not Carrying Pollen into a hive when other bees are carrying in large loads is generally considered a sign of queenlessness, and that is probably all right; but the converse is by no means always true, that when bees are carrying in pollen they have a laying queen. Most bee-keepers have probably noticed that a queenless colony has an unusual amount of pollen in its combs. That would

not be the case if the bees would stop carrying pollen as soon as queenless. Possibly the truth is something like this:

Bees have some discrimination in the matter of collecting pollen, and if there is an over-supply in the hive they will let up on the gathering, no matter whether they have a queen or not. When a colony loses its queen, the workers keep right on gathering pollen just the same, but when the combs begin to be well supplied with pollen then they desist from gathering. So when a colony is carrying in no pollen, it shows that it has been queenless for some time.

Using Starters, Full Sheets, and Combs for Swarms.—Not infrequently the question is asked how to mix these when hiving upon them a swarm. G. M. Doolittle says in Gleanings in Bee-Culture:

"My advice to all is, and has been ever since comb foundation came into use, to use only starters in the frames in hiving swarms, or else fill all frames with foundation, or give all frames filled with comb."

Italians and Red Clover.—Discussing the question of getting honey from red clover, M. Leger says in Le Rucher Belge:

"October, 1899, we received an Italian queen, but she was small, dark, and insignificant to such a degree that it was hard to distinguish her from the workers. However, in the summer of 1900 she built up an enormous population, which, however, gave no more surplus than the blacks. The last harvest came at the beginning of August, and this Italian colony, which had hung out during the excessive heat, received a super of frames simply furnished with starters. Fifteen days later, upon the visit of a friend, we opened this super; it was completely filled. So in two weeks this colony had built 10 extracting combs $13 \times 6 \frac{1}{2}$, had filled them with honey, and sealed them. The combs were beautiful, of an immaculate whiteness, almost transparent. Other colonies with black bees had at the most one or two pounds of honey in their supers."

Circumstances were such as to warrant him in thinking that the great advantage of this one colony was in its working on red clover.

Are Long Tongues of Value?—With the passing of time it ought to be possible to get an unprejudiced answer to this question. One thing that seems to be settled is that there is a decided difference in the length of different tongues. As to the importance of extra length, opinions have varied from thinking that bees should be valued in exact proportion to the length of tongue, to thinking that length of tongue is not worth considering at all. Probably neither extreme is correct. The thing that is desired is to have the largest possible crop of honey; and if it

should happen that a colony with short tongues should get the larger crop, why not prefer the colony with shorter tongues?

At the same time it looks reasonable to suppose that wherever there is any plant like red clover with corollas too deep for ordinary tongues—and it is possible that such plants may be found quite generally—extra length of tongue must mean extra storing of honey.

However great may be the value of tongue-length, it may be that it will be wiser to measure the crop stored rather than the tongues that stored it.

Labeling Honey with the producers' name and address is the proper thing if the producer retails it himself. If he sells his crop to a dealer, then he should omit his name and address unless the dealer gives him permission to label it.

Retail Packages for Honey.—In the discussion in the Ontario convention reported in the Canadian Bee Journal, the thought seemed to prevail that in the country it was not necessary to have less than 20 to 60 pounds in a package, while in the cities half-pound packages were needed. J. B. Hall put the matter tersely by saying, "The larger the city the smaller the package."

Extracted Honey—Which is Right?—In the Progressive Bee-Keeper, Editor Doolittle quotes some withering accusations against bee-keepers, in which they are charged with putting on the market extracted honey so vile in character that it hurts the market more than the adulteration with glucose, and says:

"Bee-keepers, as far as I know, take every precaution to put nothing but the best before the public at the present time."

The difference in these two views is very extreme; both can not be right. Do bee-keepers themselves put on the market that which is unfit to eat, or is there nothing but extracted honey of the best quality to be found?

Low Price for Extracted Honey, according to "X-Rays" in the Rocky Mountain Bee Journal, is not so much due to adulterating foes as it is to the bad practices of bee-keepers themselves. He says:

Of course, the presence of large quantities of glucose mixture labeled "honey," and offered cheap, has a depressing effect on the price of pure honey, especially if the mixture and pure honey bear any resemblance in quality and taste. There is so little difference between glucose honey and thin, unripe pure honey (and that is the character of much of the extracted honey found in the city mar-

kets) that the consumer can not detect it. Both are so vile that the consumer is soon disgusted and quits trying to eat it, and thus is the demand lessened and the market spoiled for really good honey. Here is the root of the apparent over-production.

The remedy is to put only first-class goods on the market, in which case he thinks it will be difficult to meet the demand.

Relative Size of Bees.—Locoppe Arnold, in Le Rucher Belge, takes comfort in the thought that workers are the smallest members of a colony of bees. Suppose the order were reversed, and the drones were smallest and workers largest, what use could be made of excluder-zinc?



APIARY OF T. S. APKER, OF LYCOMING CO., PA.

Weekly Budget.

THE BUFFALO CONVENTION REPORT in pamphlet form was mailed to the membership of the Association, as shown by the published list of names. But it seems that some have not read the Report carefully, and so are sending us 25 cents for the copy we mailed them, when it says on pages 11 and 12 of the Report that the Association voted to have the Buffalo convention proceedings put in booklet form for the members. The Association pays for it, so the members need not pay again for the Report.

THE CANADIAN EXPERIMENTAL APIARY is shown on the first page. We are permitted to present it to our readers, through the kindness of Prof. James Fletcher, Entomologist and Botanist of the Dominion Experimental Farms, who wrote us as follows:

In the autumn of 1893, in response to many representations made to the Honorable Minister of Agriculture, arrangements were made for the institution of an apiary at the Central Experimental Farm at Ottawa, in the extreme west of the Province of Ontario. This work was placed under the supervision of the Entomologist and Botanist; but the practical management of the work was entrusted to Mr. John Fixter, the Farm Foreman, who has had considerable experience as an apiarist, and who has carried out all the experiments which have been tried from the beginning of this work until the present time, and which have been reported upon year by year in the report of the Division of Entomology, which forms part of the general report of the Experimental Farms.

A suitable space was chosen near Mr. Fixter's house, where the colonies could be conveniently watched and attended to. About 50 colonies has been the average capacity of this apiary, and some interesting experiments have been tried. Among these may be mentioned the testing of various comb foundations as to quality, and when milled at different temperatures, heavy and light sheets made with different mills; the wintering of bees—in a cellar, in a pit dug in hill-side, in a house-apiary, in a root-house, and out-of-doors, with various protections; experiments with different degrees of artificial heat in the cellar, with a careful record of the temperatures and the results; the feeding of sugar syrup for winter stores; experiments with the house-apiary against the open apiary in summer; and also experiments to decide whether bees could puncture sound fruit of various kinds.

Records have been taken of the weights of colonies daily during the summer, and also of the various plants in bloom which were particularly attractive to bees, not only of the

more commonly cultivated plants, but of many others in the extensive collection of native and introduced plants grown on the grounds of the Central Experimental Farm.

A large number of farmers and fruit-growers visit the apiary every year, and every facility is given them to examine the work and to avail themselves of the information at the disposal of the apiarist. Mr. Fixter is an enthusiast, who is thought by Canadians to be the right man in the right place, and is well known to many of the fraternity in the United States, who have met him at the annual conventions. JAMES FLETCHER.

We may say further that we have had the pleasure of meeting Mr. Fixter at several of our National conventions. He certainly has a very neat apiary. We think bee-keepers, both in Canada and in the United States, would be glad to hear from Mr. Fixter.

CLOSE SATURDAYS AT 1 P.M.—Our customers and friends will kindly remember that beginning with July 1, for three months we will close our office and bee-supply store at 1 p.m. on Saturdays. This is our usual custom. Nearly all other firms here begin the Saturday afternoon closing with May 1st, but we keep open two months later on account of the local bee-keepers who find it more convenient to call Saturday afternoons for bee-supplies.

THE APIARY OF T. S. APKER, of Lycoming Co., Pa., is presented herewith, through the kindness of Mr. W. H. Heim, who visited it, and sent us the following concerning it:

About 21 miles north of Williamsport, in a small town, is located the apiary of Mr. T. S. Apker, who is an extensive bee-keeper. When a little boy he took great pleasure in his father's apiary, by helping his father what he could until at the age of 16 years, when he began to have bees of his own, and has been a successful bee-keeper for 22 years. However, in the year 1891, misfortune came to him, as it does to nearly every bee-keeper. At that time Mr. Apker lost 45 colonies with that dreadful disease—dysentery. This did not discourage him in the least, for he made a new start, and has now an apiary of 125 colonies in good condition.

The apiary is located in an orchard with grape-vines as shade. A better location could hardly be found for basswood honey, which is his main crop. He works his apiary mostly for comb honey, and a little extracted, but finds good sale for all the comb honey in his neighborhood and in Williamsport.

The hives that Mr. Apker uses are of his own make, and are somewhat on the same principle as the Langstroth. The supers are made the same as the T-super, using the 4-opening sections with wood separators. The finest comb honey I saw last season was produced at this apiary, and was of the finest quality, being the best filled sections and of nice basswood flavor.

In the picture will be noticed in the background the hills where there are plenty of basswood, also on the west side of his apiary are hills of the same, surrounded with good pasture of basswood, where nectar is gathered by his strain of bees, which are mostly blacks and Italians.

Now a word about Miss Nellie, daughter of Mr. Apker, who is also taking a great interest in bees. I am sorry that in the photo the readers are not able to see the colony of bees which she owned at the time I was there, it being on the south side of the apiary, and, therefore, not shown in the picture. This was a runaway swarm which she hived herself, being stung some. But this did not discourage her in the least. She is quite a help in her father's apiary, and takes a great interest in the busy bees.

Through the effort of Mr. Apker and two other men, who helped him during the last flood in December, his apiary was saved. Near the apiary flows the Lycoming creek, which overflowed its banks, endangering the apiary from being flooded or washed away. There was 16 inches of water in it, which made it necessary to move the bees to a higher location. Some bee-keepers lost their entire apiaries during this flood, and some lost from 40 to 50 colonies, which was quite a loss to many in this section. This was also true of Loyalsock creek, which overflowed, and caused bee-keepers to lose their apiaries. Mr. F. A. Hayes lost 50 colonies during the flood. He is also an extensive bee-keeper in this county. I am sorry to say that many bee-keepers lost their apiaries in that flood.

W. H. HEIM.

Rearing Our Own Queens.

W. H. Pridgen, although a well known queen-breeders, seems to think it well for bee-keepers largely to rear their own queens. In an article in Gleanings in Bee-Culture he says:

The tendency on the part of honey-producers is, to a greater extent than ever before, to rear their own—not only because a larger proportion of those reared at home give better results than those transmitted through the mails, all else being equal, but because the essential conditions for the production of the highest type are more generally understood.

Bees are no longer regarded as bees without considering their qualities; but each progressive bee-keeper is continually on the lookout for superior honey-gatherers and other desirable traits shown by individual colonies.

The ability to rear our queens from the best mothers, and control their mating to some extent by weeding out and preventing the production of objectionable drones, and thus, step by step, make permanent improvements in the working qualities of our bees, not only increases our profits, but lends enchantment to pleasure.

Next Week we will be able to announce something definite about rates and accommodations for the Denver convention in September.

Convention Proceedings.

The Chicago Convention.

Report of the Semi-Annual Convention of the Chicago Bee-Keepers' Association, Held Dec. 5, 1901.

BY A SHORTHAND REPORTER.

(Continued from page 341.)

THE PRODUCER'S NAME ON COMB HONEY.

"Should the producer put his name on the sections and cases of the honey he sends to markets ?

Pres. York—Mr. Burnett, you are one of the men who control this market—so Mr. Dunn said—what do you think about it?

Mr. Burnett—I don't think that was really established—that I am a market controller. Well, I don't know, where people are sending honey to a large market, whether or not it is any advantage for the names of the producers to be put on the shipping-cases. As a matter of fact, my experience has been that it is a disadvantage, as a whole. I presume it would be conceded by most of you that the best honey is the honey that a person likes. It is immaterial what the name of it is, or where it was gathered. When the people can see the name of John Jones, of Colorado Springs, Colo., on the honey, they might say, "Oh, I have seen that place out there; that honey is all gathered from wild stuff; I guess it is not very good; I would rather have some clover honey." On the contrary, if he wants some of that honey, if you don't happen to have any of it, and you let him taste something else, why he says, "Yes, that is what I am looking for." He will give it a name, and tell you what honey it is, which may be quite the contrary to the fact, but he is entirely satisfied that that is the honey he wants. I have, as a matter of fact, lost sales of honey from the fact that the producer's address was on the cases. For years we used to scrape the names off the cases, so that people would buy on their judgment, and not on their prejudices. The question was up this afternoon, while I was here, with regard to sweet clover honey, as to the taste of it, and its tasting strong. There is a gentleman of means in this town, who perhaps for years has bought a case of honey of us nearly every autumn, and has happened to get something that suited him, so a year ago he came; he is a man about 60 years old, and in business, a man of more than ordinary intelligence. He bought a case of honey, and in two or three days he came back. I happened to see him when he came in. He went up to the cashier's window and asked for a bill for the case of honey he had bought at such and such a time. He got it, and after he had the bill receipted, having paid it, he came over to where I was sitting, and said: "I bought a case of honey here the other day, and it has got to be like everything else, you can't get any honey that is pure and fit to eat; I want to send that case of honey back." "Well," I said, "all right, sir." So he got his money back, having returned the honey. As soon as I saw it, I knew, of course, what the trouble was—he got a nice-looking case of sweet clover honey, but he didn't know anything about sweet clover honey, only that it tasted wrong. People have heard that honey from certain sections of the country is not good; others have heard that the honey from that same section is very good, but if they have an opportunity of judging what the article is, for themselves, and not by the printed matter that is on it, so that their prejudice will prevent them buying something that they really want, it often results in sales; otherwise it might be a loss. This is from an experience running over 25 years, and when people really ask me, honestly, whether their names ought to be put on, I tell them, as a matter of fact, for sale in this market, it ought not to be. But in nearly all cases we are misunderstood; they say we want to sell something on which we are making a greater profit, therefore we don't want their names; also that people will want to buy this honey and won't take any other, and so on. Now that isn't fair; we want to sell all the honey we can; we at the same time want to satisfy the people who buy it. Why, if there was no one to buy the honey we couldn't sell it, so we are as anxious to please the party who has honey to sell as we are

to please those who want to buy honey. A gentleman comes in to see me occasionally, and twists me with what Dr. Miller here will enjoy very much, as it is a joke on me. He was in one day, and wanted to know if we could sell honey at a high price. "Oh, yes," I said, "we have the reputation here for selling honey at a high price." There was a gentleman standing right beside me who wanted to buy some honey. I turned to him and said, "Do you want to buy some honey?" He said, "Yes, but I want to buy it cheap." "Certainly," I said, "we sell cheap." He said to me, "I just heard you tell that man that you sold for a high price." There is just this about it: The man who has goods to sell wants to sell dear, and the other man wants to buy cheap. It is a little difficult to please both of them, but we try to strike a happy medium.

Mr. Dunn—I want to take exception to Mr. Burnett on this question. It is the duty of every man who produces honey to brand it; if it is a good article, he can afford to stand on that; if it is a poor article, he will soon find it out, and know what the market for it is. I brand all my honey—all my cases—and I stand on my record and guaranty, and there is no trouble about it. I would recommend every bee-keeper to brand his honey; that is what gives it a standard. Make a reputation for yourself by sending proper goods to the market, and proper weights, and there will be no trouble about selling your honey.

Mr. Horstmann—I think we have to satisfy the people we are buying honey from. I don't believe it is necessary to stamp honey, if we are selling it to commission men who are going to sell it again. In my own neighborhood I would put my stamp on. They would notice that stamp. But in sending it to a commission firm, I would not do so. After I have sold the honey to them, it doesn't belong to me any more, and I don't think it is right to put my name on it, unless they want it on. It all depends on the party who is buying the honey; if he wants it, all right; if not, it should be left off. If I had a lot of honey to sell in that way, I would ask, "Do you want the stamp left on or off?" and if I was told to leave it off, it would be left off.

Mr. Riker—if I were to buy honey from commission men, I would much rather the name of the producer would be on the case of honey; then I would not be afraid that the honey had been tampered with in any manner.

Mr. President—This is comb honey, Mr. Riker.

Mr. Ricker—I would have the producer's name on it, if I were going to buy honey of a commission man, as that would be a guaranty that it was good honey. That is the way I would look at it; I think other people would do as I would do in that respect.

Mr. Burnett—Does a fact of a name being on a section of honey guarantee that it is good?

Mr. Riker—Not necessarily.

Mr. Burnett—Then that doesn't amount to anything.

Mr. Riker—if the producer puts an article in the hands of commission men with his name on it—the man who buys it would expect that the producer was honest, or he would not want his name on it.

Dr. Miller—Like most questions, this one has two sides to it, and I think it may have three sides. If I have comb honey, and am supplying the market, if I am known even a little bit as an honest man, people get to know the honey that I sell, and I put my name on it. Say where one of you live, you have the reputation there of being honest; people will buy your honey and would rather buy it than any other, and in that case it is well to have the name on it, if you are the producer. Your groceryman will prefer it, providing that you produce good honey. Here is another case, in which a man has a trade. Suppose that I were selling honey in Chicago, and going around and delivering it. I must buy from you producers; now I would rather not have the name on, because I have a trade of my own that I am building up. If one of you should say to me, "I am willing to supply you that honey, but I want my name on it," I would say, "No, I have built up my trade, and have taken pains to get customers, and I am entitled to get credit for the work I have done. I want to sell my honey that simply goes as my own, and I don't want any name on it; and if you don't like that, you don't need to sell the honey to me." If a man were doing a large enough business, so as to produce an amount to supply largely any one of the large markets, it might be possible that he would prefer to have his name on it, because it would be handled largely, and his name on it would have its advantages, and the dealers might want it on. The same as I have in mind now—the Atwood Clothing people handle the Rogers, Peet & Co.'s ready-made clothing, and the Atwood people want that name on those goods, because they are supplying those par-

ticular goods to the trade. There might be such a case in handling honey, where both sides would want it; the same thing applies to the Diston saw; any dealer in hardware would be glad to have the stamp of "Diston" on their saw goods, because they will sell better for it. It is a matter of mutual understanding. I think it must be conceded, that if any man wants his name on his goods, it ought to be on, and if any one does not want to handle it, he doesn't need to do it. I have some doubt about the propriety of having commission men, or any dealer, scratch off the name from the cases; I very much doubt the rightfulness of that. Then there is that matter of prejudice which has been spoken of here. It is a poor rule that won't work both ways. The very fact that people are prejudiced might work good for the producer as well as it might work harm. A person is prejudiced in favor of a certain kind of honey, so he buys it. It works both ways, but I very much doubt whether you will settle the question here; people will do as they please, and every one of you who produce honey, if you want your name on it, you have a right to put it on.

Mr. Moore—There is one thing that occurred to me. I am actually spending five cents a pound in expenses and advertising, to put honey on the market; that entitles me to have my name printed on every pound of honey I sell. My customer wants uniformity. If I give him, this time, honey that Mr. Baldridge produces, the next time Dr. Miller's, then honey that Mr. York or Mr. Dadant produces, there is a lack of uniformity, and he will think right off: "If this man gets his honey from Dadant, and Baldridge, and York, and some one else another time, I don't want it;" whereas, if it all comes with Moore's name on it, the uniformity will strike him and help sell the honey.

Dr. Miller—if Mr. Moore has a customer, and he sells to that customer some honey that he likes very well, and it has my brand on it, the person may find out that he likes my honey best, and he will buy his honey from me, or whoever produces it; Mr. Moore will lose his sale. There is a question whether I would gain in that instance. He is working and spending five cents a pound to make his market—ought he not to get the benefit of it rather than I? We must look at both sides. Looking at it from my side, I might say, "I don't care; I want to get the credit for it;" but if I want to be entirely honest, he ought to have some reward, if he is expending money to build up his trade.

Mr. Horstmann—if I sell my honey to Mr. Moore, Mr. Moore will sell that as Moore's honey. He is responsible to his customers for that honey, and I am not responsible to his customers, only to Mr. Moore; so I think it is perfectly right, if the buyer wants the name left off, he should have it left off. If any man buys honey from me, I don't care whether my name is on or not; if he doesn't want it on, I won't put it on. If you insist on putting your name on it, it will lose you lots of customers. If I were buying honey, I could get all I wanted without any name on it; and if some one selling me honey wanted to have his name on it, and insisted on its being on, I would buy from somebody else.

Dr. Miller—I move that we allow every bee-keeper to do as he pleases.

Mr. Stowe—I believe as Dr. Miller does on several points. I sat in the grocery-store last evening, and a man came in and said: "Have you any of Stowe's honey on hand?" I was standing there, but he did not recognize me. The grocer said: "Yes, I have it; it has his name on it." Then the man said, "I want some; I know it is pure; I bought some in Chicago a few days ago, and my folks didn't like it at all, so I want some of Stowe's—some that is pure." My name on that honey was a recommendation for it; but if I were going to ship honey to Mr. Burnett, I would leave off the name.

Pres. York—I should like to know what right Mr. Stowe has to put his name on it, when his wife is the bee-keeper!

Mr. Stowe—it is an old stamp—it didn't have "Mrs." on it. [Laughter.]

(To be continued.)

Why Not Help a Little—both your neighbor bee-keepers and the old American Bee Journal—by sending to us the names and addresses of such as you may know do not now get this journal? We will be glad to send them sample copies, so that they may become acquainted with the paper, and subscribe for it, thus putting themselves in the line of success with bees. Perhaps you can get them to subscribe, send in their dollars, and secure for your trouble some of the premiums we are constantly offering as rewards for such effort.

Contributed Articles.

Does Getting Bees Started in the Brood-Nest Seriously Interfere with Starting in Supers.

BY DR. C. C. MILLER.

ON page 311, Mr. Doolittle asks me to tell the reasons for my disbelief in the statement "that allowing bees to get started storing in the brood-nest seriously interferes with their storing in supers." I am very glad to reply to the man to whom I owe not a little for some of the things I have learned about bee-keeping.

I do not see that the first quotation from Mr. Boardman conflicts in the least with my belief. I think that no bee-keeper of any experience ever expected his bees to begin storing in supers while there is plenty of vacant space below. I should be glad to understand how that conflicts with what I believe to be the fact that starting to store in the brood nest does not seriously interfere with their storing in supers.

The second quotation from Mr. Boardman is given without saying where it is to be found, and, taken from its setting as it is, I do not know its full bearing—do not know what time is "this time," nor the conditions involved—so I cannot say whether it conflicts with my belief or not.

If I am not mistaken, storing in any and every case, in accordance with the first quotation from Mr. Boardman, begins in the brood-nest—possibly, to be more exact, in the brood-chamber or brood-combs—which, however, does not materially alter the case. The bees first store in the brood-chamber till it is filled. Moreover, a writer for whose opinions I have much respect is very positive in the opinion based on very careful observations that no bee coming from the fields ever goes straight to the super to deposit its load, but leaves it always in the brood-nest. Afterwards, it is carried by younger bees into the super, providing there is not room for it in the brood-chamber. If, however, there is room for it in the brood-chamber, in the brood-chamber it will be left, no matter how strong may have grown the habit of storing in supers.

One year, a good many years ago, I thought I might prevent swarming by giving additional room in the brood-chamber for the queen to occupy. I put one, two or three empty combs in the middle of the brood-nest. If three combs were given, the bees promptly filled them with honey, in spite of the previous habit of storing in supers, and only when the queen was ready to use those combs were they emptied out for her.

When I used 10-frame hives, there was more honey stored in the brood-nest than I find in 8-frame hives, and if the harvest began with empty combs in the brood-chamber those empty combs had to be filled before work was done in the super; and I would rather have that white honey in the super; but when the brood-chamber was filled I could not see but the bees went to work in the super just as willingly as if they had earlier formed the habit of storing in the super. Perhaps that does not exactly express the thought. Bees are creatures of habit, and after storing in a certain place, other things being equal, they will go on in that place more readily than they will commence in a new place. But always the desire to have their stores near the brood-nest is stronger than the habit of storing away from it, and they will store elsewhere only when compelled for want of room in the brood-chamber. What I mean is, that after filling up two or more combs in the brood-chamber they will then as readily form the habit of storing in the super as they would have done in the first place if they had not had those two or more combs to fill.

I think I have seen stated in forcible language by the same writer whom I have mentioned, that when the old queen is succeeded by a virgin queen the bees during her virginity devote their energies to filling the brood-chamber with honey, and then when the young queen begins laying the honey is rushed above and the supers filled with marvelous rapidity; that, in spite of the fact that the bees have been fixing the habit of storing in the brood-chamber. Does Mr. Doolittle think he would get any more honey if, during the time that the young queen has not yet commenced to lay he would fill the brood-chamber with dummies so as to force the bees to continue the habit of storing in the super?

Give a colony an extracting-super, and keep it restricted to that one story, emptying it often enough to give them room, and after having the habit of storing in that one story continued during three weeks time, give them a second story without emptying the first, and see if they will not as promptly enter the second super as if it had been given two weeks sooner.

It is probably the truth that habit has its bearing, but not enough to be a serious hindrance; that bees always prefer to have their stores as near as possible to the brood-nest, and store away from it only when compelled to do so; that after having continued the habit of storing in the supers no matter how long a time they will always change to storing in the brood-chamber if room there is given; that they always begin storing in the brood-chamber before storing in sections; and that the length of time they continue storing in the brood-chamber has no special bearing upon their hesitancy to begin in the supers.

Mr. Doolittle wants me to give a better plan if I have one. As no plan has been mentioned I do not understand to what he refers. If he will say to what plan he refers I will be delighted to give him a better one—if I have one. But I have not been aware that we have differed in any plan that might be affected by a difference of belief as to the things that are herein mentioned. McHenry Co., Ill.



Question, "Do Robber-Bees Sting?"—Answered

BY W. W. M'NEAL.

ON page 115, in an editorial under the heading, "Do Robber-Bees Sting?" A suspicion is ventured that robbers do not sting the defenders of the hive they are trying to rob. Moreover, the Editor asks for something positive upon the subject, and here it is: Robber-bees do sting at such times, and with terrible effect, too. If this were not so, how is it they are so successful in over-running at times a good, normal colony? Surely, the bees of the attacked colony are not intimidated by any superior force of numbers, and retreat before the robbers in their rush for the stores! This is not in the nature of the honey-bee when she feels that her home is worth fighting for. When such a colony submits to the plundering of its combs, you may know that its fighting force has been swept away by the fierce onslaughts of those frenzied desperadoes.

There is something peculiar about the apparent ease with which robber-bees will, in so many cases, get the better of a bee that opposes it in an endeavor to enter the hive. The robber is worked up to the very highest pitch of excitement and abandonment to an evil habit; the poison-glands pour forth their fiery fluids more bountifully; and, the honey-sac being almost perfectly in a state of depletion, it will be seen that she is in the very best possible fighting condition. But a robber-bee will not use its sting for the mere pleasure of killing—that characterizes a villain in human form. There is a risk to run which she is not willing to take in any such way. I mean the risk of losing her sting. The danger of having it torn away is not so great when thrust into the body of another bee; but when the sting has penetrated sufficiently to kill outright, the bee can not withdraw it easily, and I have often seen them crawling about upon the ground in front of the hive dragging the dead bee thereby.

Robbers will often bite and sting just a little a bee that has surrendered, in an effort to make her give up the last mite of honey, which may cause the bee to die in a short time. This, to me, is more plausible than that the captives, so to speak, join the victors in their own hive. When a robber has been seized by a fighting bee, and the two are buzzing so rapidly on the alighting-board or ground in front of the hive that the eye can not determine what is actually being done at the time, the fact that one, and quite often both, of them have their mandibles fastened upon each other at the close, convinces me that both were fighting. Sometimes they cease buzzing, and wrestle on the ground for the advantage. The mandibles hold a death-grip while the two hindmost legs of each are dexterously used in an effort to prevent the other from getting into position to use its sting. The bee whose abdomen is distended the least of the two that are fighting, usually succeeds in this and destroys the other. So soon as the fatal thrust of the sting has been effected, the victorious bee will usually make an effort to break away; but the other will often cling by the mandibles till she is too weak to do this.

As the editorial in question suggests, evidence of a very conclusive nature may be had in cases where the conten-

tion is between a colony of Italian and black bees. The untrained eye then can easily separate the robbers from the regular inmates of the hive. But the experienced observer will not often be deceived by the maneuvers of robber-bees. The sweet melody in the hum of a bee engaged in honest pursuits is so different from the loud, shrill notes of robbers that the ear alone may detect them. The bright, cheery color of honesty is soon swept away, being replaced by a dirty, glassy, greased appearance in a short time, when a bee resigns itself to this evil habit. All Italian bees will, when they become aged, assume a darker color than they had when in younger life; but this shade of blackness that comes with waning vitality—vitality spent in honest toil—contrasts largely with the other, though the novice may be wholly unable to determine a robber by its color.

Upon approaching a hive—and I might say any hive, even its own—a robber-bee will hover over the entrance just out of the reach of the guards, very much as a sparrow-hawk will flutter above a certain spot in some grassy, weedy field when watching for a mouse.

There is anything but pleasantness in an apiary where the bees have acquired the habit of robbing. On behalf of the little honey-bee, and the good graces of every reader of this Journal who has the care of bees, I beseech you to use great care not to provoke them to rob. Their mission is a noble one, and they should not be tempted to pursue an ignoble one through the careless exposure of sweets.

I would be pleased to hear from others upon the subject of robber-bees.

Scioto Co., Ohio.



Italianizing Bees at the Time of Swarming, Etc.

BY G. M. DOOLITTLE.

QUESTION—I see that you sometimes answer questions in the American Bee Journal, so I send along a couple. Wishing to Italianize my bees I have thought that it might be done by changing queens during the time of swarming. What I mean is this: If I have my queens' wings clipped, and hive the new swarm on the returning plan, can I pick up the old queen while the swarm is out, put an Italian queen in a cage, put the new hive on the old stand, and when the swarm returns let the Italian queen run in with the bees into this new hive, the same as would the old queen did I not change them? Would it be safe to let a strange queen go in with the swarm?

ANSWER.—From an experience of 30 years I have found that the changing of queens, upon the hiving of any swarm of bees, in any place, is liable to "raise a rumpus," and especially is this the case where the swarm is hived upon a new stand; for in this case the least disturbance or dissatisfaction will start the swarm running out and all over the hive, resulting in the larger part of the bees going back home. And the chances of failure are too great for all practical purposes with a single swarm hived in a new location. Where two or more swarms cluster together, if the new queen is placed in a large cage made wholly of wire-cloth except the stopper, so that the bees can get near the queen in large numbers, and the cage hung with the clustered swarm for half an hour or so till they are led to call her "mother," then this large swarm can be hived where you please, and the queen allowed to run in with the swarm, and as a rule all will go well.

The why of this is that where two or more swarms cluster together, they seem to know that strange queens and strange bees must be thrown one with the other, and so are not so disposed to be such sticklers for their own queen, or go back to their brood if they cannot find her with them. But as very few wish to hive two or more swarms together, so that it is possible thus to give a queen, only occasionally, did we so wish to do, this also is hardly practical. The chances are better where the swarm is hived in a new hive on the old stand, or allowed to return as our questioner suggests, and where you have the old queen so you can control her on account of her having a clipped wing; but even then they will sometimes become so dissatisfied that they will hunt up the old hive (unless moved quite a distance from its old stand), and all or nearly all go back to it, or worse still, go into the hives all about the apiary, where in many cases they will all be killed.

If the above large cage is used, placing the cage over the frames before the swarm returns or is hived, and the queen allowed to remain in this cage for a day or two, the chances of success are much increased. The reason for this dissatisfaction coming to the bees, is not so much that they have a strange queen, as that ninety-nine-one-hundredths

of them consider that they have no queen at all, they thinking thus because when the first few bees come in contact with the strange queen they immediately cluster her so that the most of the bees cannot get near enough even to get a scent of her, and so the majority consider themselves queenless, and all know that it is very hard work to make queenless bees stay in a new hive.

The large cage places the queen so that the bees cannot cluster her so but what the main swarm can "catch the scent," and so they do not consider themselves as being without a queen. On the whole, I would not advise the changing of queens during the swarming season in any way or by any plan, for I find it to be much more annoying to try to change a queen with a colony about to swarm, or with those which have lately swarmed, than with any others, or at any other time of the year, and, besides, a failure more often results.

SUPERSEDED CLIPPED QUEENS.

QUESTION.—The other question I wish to ask is whether it is advisable to clip the queen's wings? Are such more liable to be superseded by the bees than those having perfect wings? What has been the experience with such queens.

ANSWER.—In nearly every apiary, where the manager can or is expected to be present during the swarming season, I should advise the clipping of all laying queens in any apiary; in fact, I should as soon think of going back to box-hives as to the managing of an apiary where the queens have their wings so they could fly out with the swarm, where I was working the same for comb honey. It will be noted that I said, "in nearly every apiary." Why I said this was, there are a very few localities in the United States, so I am informed, where ants are so thick on the ground, and about the hives, that it would not be safe to allow the queens to be out on the ground for any length of time, else they would be killed by these same ants. But as such a place or places are a rare exception, it would be safe to say that I would always clip the wings of all queens in the apiary as soon as laying.

Some seem to think that queens with clipped wings give far more trouble at swarming-time than do those having their wings; but I cannot think that such have had much experience with clipped queens; for with myself I would rather manage three swarms where the queens are clipped than one whose queen can go with the swarm. Especially is this the case where there are trees in or about the apiary, whose height exceed 15 feet; for where there are small trees near the apiary, some swarms will alight so high that it is often more than they are worth to climb for them, while the clipping of the queen's wings does entirely away with all climbing, if no after-swarms are allowed to issue.

Without going over the whole ground regarding the advantages arising from clipping, it can be summed up thus: Clipping the queen's wings prevent swarms decamping, as a rule; saves the climbing of trees after swarms or the marring of those trees by the cutting of limbs or the bruising of the same; makes it easy to separate the bees where two or more swarms come out in the air together; facilitates the hiving and managing of swarms; and gives the apiarist perfect control of the apiary during the swarming season.

As to these clipped queens being more liable to supersede, an experience of over 30 years says there is nothing in the claim put forth by some that such is the case, for during that time I have had very many such queens remain the profitable heads of colonies for three, four, and in a few instances five years. My impression is that superseding, as a rule, is caused by failure on the part of the queen as an egg-layer, and not on account of any clipping.

On one occasion in carelessly clipping a queen I cut off one whole leg, and one foot off another, besides nearly all of the four wings; but as far as I could see this made no difference as to the usefulness of that queen, for she did her duty with the best for over four years, and then lost her life by carelessness on my part. Onondaga Co., N. Y.

Our Wood Binder (or Holder) is made to take all the copies of the American Bee Journal for a year. It is sent by mail for 20 cents. Full directions accompany. The Bee Journals can be inserted as soon as they are received, and thus preserved for future reference. Upon receipt of \$1.00 for your Bee Journal subscription *a full year in advance*, we will mail you a Wood Binder free—if you will mention it

Honey and Beeswax—Considered by the Illinois Food Commission.

BY PROF. E. N. EATON, STATE ANALYST.

(Continued from page 345.)

VARIETY OF ADULTERATIONS.

HONEY-DEW.

In 1885, Prof. Wiley called attention to honey collected in pine regions, evidently collected from pine-tree honey-dew. It is now known that such nectar is obtained from secretions of aphides (plant-lice) which infest not alone pine-trees but most vegetation. Honey produced in this manner from flora of any locality is termed "honey-dew honey," and has the following characteristics: Usually dark in color, rank in flavor, and unfit for market. It is distinguished chemically from other honey by a dextro-rotary, or slightly levo-rotary, rotation of polarized light, a low percentage of invert sugar, and a high percentage of ash.

CANE-SUGAR.

Sucrose, or sugar of cane and sugar beets, was, before the advent of glucose, much used in the adulteration of honey. It has not altogether gone out of fashion yet.

There are two objections to its use from the fabricator's standpoint:

First.—Its cost; being nearly as much as California honey.

Second.—Its tendency to crystallize from solution. Cane-sugar does not crystallize readily, however, when mixed with 75 percent of honey.

The use of much less proportion of cane-sugar would hardly pay for mixing. If a smaller quantity than 15 percent is present in honey the sugar was probably fed and elaborated through the organism of the bee.

Another method of adulteration with cane-sugar is to feed the same to bees. Bees readily eat cane-sugar. It is a common and justifiable practice among bee-keepers to feed bees through the fall to winter them, especially if flowers be scarce. Some also feed at other seasons to stimulate the breeding of young bees. Last year a sample of extracted honey was secured from Aurora, said to be produced by Mr. Wheeler, of Plano, which, on analysis, was found to contain about 25 percent cane-sugar. It was reported as containing sucrose, either added intentionally or fed to bees, with probability in favor of former. Eight months afterwards the same honey was re-examined with practically the same result. Lately six samples of honey (three extracted and three comb) were secured directly from the apiary of Mr. Wheeler, and submitted to analysis. All the samples but one were normal in behavior. No. 6 (a comb honey) contained 23 percent cane-sugar. The comb consisting of pure beeswax, I reported the sample as obtained by artificially feeding bees. At this time I did not know the history of the sample. I am now convinced the previous sample was fed rather than mixed. Mr. Wheeler admits having fed sugar, but not for purposes of profit. He claims that it is not profitable to feed cane-sugar, as the bee employs one-half in the manufacture of wax. However, if this be true, and the honey is sold in comb it would seem as if a fair margin of profit is left, allowing six cents per pound for sugar and 14 for comb honey, 20 percent of which is water. Then, too, if old combs are used, little sugar need be diverted from the manufacture of honey. However, only a very small amount of comb honey is made in this way, and but two specimens have been identified by me—one in Minnesota and the other the sample secured from Mr. Wheeler.

INVERT SUGAR.

Invert sugar is produced by splitting up, with the aid of acids or ferment, cane-sugar (sucrose) into equal parts of two other sugars—dextrose and levulose. Although neither of these sugars is as sweet as cane-sugar, a mixture of the two is said to be sweeter. As the bee utilizes this identical chemical reaction to manufacture honey, it will be surmised that the detection of man-made invert sugar in natural honey is a matter of no little difficulty.

That the adulteration of honey with invert sugar has passed from the realm of possibilities to actualities was long ago suspected by the United States Department of Agriculture. I have also noticed samples which, I think, illustrate the fact that the busy bee has no monopoly of industry. However, the low cost of honey, the high price of sugar, and the expense of manufacturing, will, for the time being, safeguard honey from this form of sophistication.

GLUCOSE.

Glucose is produced by the action of dilute sulphuric, oxalic or hydrochloric acid upon starch, in an open or closed vessel, with or without pressure. The conditions of manufacture govern the quality of the syrup. If the boiling be conducted in an open vessel only a part of the starch will be converted into dextrose, the remaining portion forming dextrin. This forms the so-called glucose syrup of trade. If the boiling is conducted in a closed vessel under pressure almost all the starch is converted into dextrose. This product, after treatment and evaporation in vacua, forms the article of commerce known as grape-sugar. The liquid product is alone used as an adulterant of honey.

In Germany potatoes furnish the starch for the manufacture of glucose, but in the United States corn alone is used.

After the starch is converted into "glucose," the acid is destroyed. In case sulphuric or oxalic acid is used, lime is added, forming calcium sulphate (gypsum) or calcium oxalate, and these products being insolvent in the syrup may be separated by filtration. In this country, of late years, hydrochloric acid is generally used in manufacturing glucose, the acid being destroyed by soda-lye, which forms sodium chloride, or common salt, which, while it can not be removed on

account of its solubility, is perfectly harmless, and is not in sufficient quantity to affect the taste of the syrup. Hydrochloric acid is also superior to sulphuric acid, as it is less likely to be contaminated with arsenic. The recent wholesale poisoning in England was attributed to arsenic in glucose used in the manufacture of beer. In the manufacture of glucose England manufacturers use sulphuric acid produced from pyrites, the original source of the arsenic.

Several grades of glucose are marketed, graded by degree of concentration and color. Confectioners' glucose is the best, and almost white in color.

Recently a grape-sugar has been placed upon the market consisting of almost pure dextrose, white in color. The product in a granulated form is being somewhat extensively used as a substitute for cane-sugar in baking and to mix (I am not aware of its being done fraudulently) with cane-sugar. It is a possible adulterant of honey.

Glucose is only one-half as sweet as cane-sugar, possesses a characteristic metallic taste, and is miscible in all proportions in water and solutions of other sugars. It does not readily crystallize. Ittractably acquires the flavor of the substance with which it is mixed. Its cheapness and general properties make it an excellent adulterant for other sugars. Probably nine-tenths of all adulteration in honey and syrups consist of glucose.

Glucose occurs in Nature in combination with other sugars in many fruits and vegetables. An investigation performed at the instance of the United States Department of Internal Revenue resulted in finding glucose as made in this country not in the least detrimental to health; in brief, a proper food.

It may be mentioned that the glucose of to-day is superior to the product investigated by this Commission. Some grades of glucose, especially that intended for Southern trade, are decolorized and preserved by sodium sulphite, a substance not improving the healthfulness of any food into which it enters.

WATER.

Water is a very cheap adulterant of honey, but in excess is as potent as a label, and generally affects its market value. In case honey is not sufficiently ripened, or if much water is added, honey will ferment, thus destroying its market value except for vinegar manufacture.

HONEY IN THE HOME.

Honey is a necessary luxury. It is within the reach of the poor and not despised as a delicacy by the rich. It is produced largely by home apiarists, even in the cities, as almost 300 bee-keepers reside in the neighborhood of Chicago, some keeping colonies on the tops of tenement buildings, known as roof-apiarists. The bees gather from the gardens, the groves and the grass-lands.

Surely, such an industry should be protected from the unjust competition of the food sophisticator. Such a name, honestly gained and honorably worn, should not be allowed to be used as a cloak to cover inferior products.

And, more than all, the consumer is entitled to receive the article for which he asks and tenders an equivalent in currency.

BEESWAX.

This appears to be one of the products obtained from the nectar and pollen of blossoms by their passage through digestive organs in the body of the bee. The bee builds up the cells of its comb from the undigested portion known as wax. The latter is rendered from the contained honey and cast into cakes—the yellow beeswax of the market; or it is cut into thin ribbons and exposed to the bleaching effects of air and sun from 10 to 30 days, and is then known as white beeswax.

Beeswax is ordinarily of a yellow color, semi-transparent, brittle when chewed, and shows a slight taste of balsam. It melts in the neighborhood of 63 degrees C, and its sp. g. at 15 degrees C should be between .956 and .975. Bleaching it in the sunlight raises the melting-point to about 65 degrees C, but affects the density but little. In observing melting points in the capillary, the temperature was observed when capillary action started. This method gave very uniform results.

Beeswax is known to be essentially a mixture of two organic compounds—cerotic acid $\{ \text{C}_18\text{H}_{34}\text{O} \}$ and myricin (myricyl palmitate) $\{ \text{C}_20\text{H}_{38}\text{O} \}$, though smaller quantities of melissic acid $\{ \text{C}_18\text{H}_{34}\text{O} \}$ and myricyl cerotate $\{ \text{C}_20\text{H}_{38}\text{O}_2 \}$ are always present.

The quantitative chemical data most important to obtain in looking for adulterations of beeswax are the total saponification, acid and ester equivalents. These should respectively lie between the limits 90-95, 168-21, and 72-76. If a sample answers all of the above-mentioned requirements, it must be considered commercially pure.

Beeswax has been adulterated with tallow, stearin, paraffin, resin, as well as other waxes.

The following samples came up for analysis: No. 15058 was a section of honey-comb, claimed to be entirely artificial. The honey was found to give perfectly normal chemical data, as also did the wax. The examination of the comb by expert bee-keepers also established its genuineness, the frame showing the bee-cement. The wax, which was pale in color, revealed pollen under the microscope. Melting-point of the wax from various parts of the section, including the foundation, were determined by the capillary method, and gave normal results.

Sample No. 6 was a section of honey-comb. In this the chemical examination revealed the honey to be strongly admixed with sucrose. The organoleptical examination by experts showed the comb foundation to have been capped by bees. This verdict was borne out by the physical and chemical data of the wax, which was light in color.

Samples of pure wax were also obtained in the open market. One

from George W. York & Co., direct from producer, was quite dark in color, while one obtained from Richards & Co., Ltd., was of a medium shade of yellow. A sample of comb foundation from The A. I. Root Co. was also subjected to analysis. This latter wax was quite pale in shade. The following are the results in tabular form:

WAX.	M.P. °C.	Sp. gr. 15°-6° C.	Acid Number.	Ester Number.	Saponifi- cation Number.
No. 15058...	62.7	0.9700	20.02	72.00	92.02
No. 6.....	63.5	0.9569	16.80	76.16	92.96
Richards & Co.	62.0	0.9510	18.76	73.64	92.40
York & Co..	62.5	0.9540	21.70	77.0	98.70
Comb fdn.	62.0	0.9600	18.72	72.0	90.72
Limits for pure wax,	62 to 64	0.950 to 0.975	16.8 to 21.6	72 to 76

The acid and ester number of York & Co.'s samples are slightly high, but as the ratio between them has the normal value, this wax must be considered pure. The melting-points of waxes from two other combs were found to be normal. In these combs the honey also behaved normally.—From Second Annual Report of State Food Commissioner, issued this month (May).

* The Afterthought. *

The "Old Reliable" seen through New and Unreliable Glasses.
By E. E. HASTY, Sta. B Rural, Toledo, O.

CANE SUGAR VS. BEET-SUGAR.

Sad to relate, governments sometimes go into systematic lying for a purpose. Without sufficient evidence I rather "smell" that the cane-sugar versus beet-sugar question is kept from being settled mainly by the British Colonial Office, and that they engaged in that sort of thing for the benefit of British colonies which produce cane-sugar. But certainly there may be one real difference. The two kinds of sugar quite likely go through different processes *in contact with different chemicals*. If so, they can be exactly alike only in the improbable case of getting all the chemicals out of the finished sugar. But does this amount to a practical distinction, or is it infinitesimal and non-practical? I don't claim to know. Page 259.

THE HONEY MARKET.

Large capacity for the reception of advice, eh? Well at this end, or corner, there is small capacity for finding anything better than we already have about the honey market. Might lose the meat we have if we plunge after all we see mirrored in the stream. Page 259.

DEEP FRAMES FOR WINTERING BEES.

It is easy to see why a deeper frame *ought* to winter bees better than the Langstroth; but we must also harken to the facts. I winter bees out-doors, and my Langstroth hives almost always better than the others that are deeper. Some other brethren find so, too, it seems. It just occurs to me that if I use more upward ventilation the reverse would appear. A healthy colony, strong enough and vigorous enough to go into the winter alone, has no difficulty in moving the cluster backward as they eat the honey, *if they have enamel overhead*, and the hive is tilted moderately forward. When warm air cannot go straight up it will compromise by ascending astian. But the fact that my Langstroth hives are run for comb honey and the others for extracted counts sadly to obscure solutions. Page 260.

LONGEVITY OF WORKER-BEES.

On the longevity of worker-bees the Chicago Convention folks seem not to strike any oil worthy of Spindle-top. 'Spect they mostly kept the ages of their bees no more accurately than certain ladies are accused of keeping theirs. Page 260.

AMOUNT OF HONEY CONSUMED BY BEES.

On page 264 the colony of Adrian Getaz, which eats 200 pounds of honey per year, seems a little too much like the "Heathen Chinee" who had up his sleeve 24 packs. "Going it strong, yet I state but the facts." Let me, in my capacity of champion guesser, guess off a year's liberal rations: Nov. 1 pound; Dec. 1; Jan. 2; Feb. 4; Mar. 5; Apr. 8; May 20; June 30; July 28; Aug. 16; Sept. 10; Oct.

5. Total, 130 pounds. Presumably, for an earlier climate the figures should be readjusted so as to put more of the amount in April and May, and less in later months.

SUCCESS DEPENDS UPON THE QUEEN.

Good sentence from Ada L. Pickard: "A great deal of success for the coming season depends upon the queens we have put into winter quarters." Page 265.

FERTILIZATION OF FRUIT-BLOOM BY BEES.

I do not wonder particularly that Mr. Thaddeus Smith thought my last year's insect remarks a little rough. But such things have to be said; and sometimes they get said to persons who do not deserve them. Sincerely beg pardon; but won't promise to refrain from doing it again—to the very next fellow. *Most people* have talent for not seeing things which is immense—immense almost beyond belief—that is, when the things are such as they never tried to investigate. For instance, an intelligent farmer, my neighbor, once expressed astonishment to see me carrying by a white clover, that is, a red clover so far as species is concerned, with a pure white bloom. Had never seen such a thing. Well, there was a fine one growing not far from his gate that minute; and he had doubtless sat on his mower and mowed down hundreds of them without his mind taking any report from his eyes.

Actual observations are what we want; and I do not wish to discount Mr. Smith's or Mr. High's—any further than to remark that it takes a good many I-didn't-sees to head off an I-did-see.

That Pelee with bees has no better fruit than other islands without bees is pretty strong medicine, so far as it goes.

My observations last year on strawberry bloom were that lots of insects of a number of species visited the bloom. Many honey-bees were among them. Pistillate blooms were visited about as freely as the perfect blooms. If I remember aright, it was for denying that that I chucked Mr. Smith down in the see-nothing class with my neighbor the farmer. (Saw a honey-bee yesterday deliberately draw nectar from a pistillate strawberry bloom.)

Mr. Smith is again far astray in saying that nobody *claims* that bees improve the quality of fruit. Bees cross-fertilize; and it is claimed, and not only claimed but apparently proved up by photographs, that cross-fertilized fruit is sometimes very much larger and better than self-fertilized fruit. Not claimed, I believe, that it *always* shows any difference.

Questions and Answers.

CONDUCTED BY

DR. C. C. MILLER, Marengo, Ill.

(The Questions may be mailed to the Bee Journal office, or to Dr. Miller direct, when he will answer them here. Please do not ask the Doctor to send answers by mail.—EDITOR.)

Transferring Bees—Producing Extracted Honey—Introducing Queens.

1. I am a beginner, having bought my bees last fall; they are in Langstroth hives, but the combs are not very correct, and I wish to cut them and make them straight. Please instruct me how, and when.

2. I intend to go in for extracted honey. If I put the top part of the hive on with starters will the bees go to work on them without any coaxing?

3. Would it be safer to introduce a queen in an artificial swarm than in a natural one?

ONTARIO.

ANSWERS.—1. First take out any frames whose combs are straight enough to lift out. Then cut the comb enough to get out the rest. It is possible that all the combs are built crosswise in such shape that no frame can be lifted out. In that case take a knife long enough, or a saw, and cut away the attachments to the sides of the hive, then turn the hive upside down and dump out the whole of its contents. You will then fasten the combs in the frames as directed for transferring in your text-book. Before operating you may drum out the bees, so as to have them out of

the way, although if the case is not a very bad one it may not be necessary to drum them out.

2. Yes, but they will start sooner in the upper story if you put in a frame of brood from the lower story, returning it below when the bees have started above.

3. There ought to be no difference, if both are alike as to queenlessness.

Introducing Queens—Hiving a Swarm.

1. How do you think it would work to introduce a queen from a long distance in this way? Place a frame of hatching brood in a wire cage, with the queen thereon, and let her remain for about 48 hours, then release her.

2. There was a swarm of bees that issued from my apiary about two weeks ago. I being away at the time, my friend, who was present, undertook to capture the swarm. The bees had settled in a large oak-tree, and he climbed up near them and sprinkled them with water, then sawed off the limb and proceeded to hive them, but on descending to the ground he found they had taken flight, and were settling on another limb of the same tree. He climbed up the tree again and gave another sprinkling with water, then sawed off the limb and descended to the ground; by this time they were settling on a small limb of a blackjack, to which he had easy access from the ground. He sprinkled them again and quietly sawed off the limb, being careful not to jar them off, and placed them near the hive, or decoy box, which they readily entered. The shutter was then closed, it being perforated with holes to give them air. They were kept in the decoy box about two hours, while we were making preparations to transfer them. Upon examination we found three-fourths of them dead. Can you tell the cause of their death, whether by water or too much heat? We found them very much besmeared with honey.

TEXAS.

ANSWERS.—1. The plan is certainly good up to the time of releasing, and then it depends upon circumstances as to the reception. If the old queen had been removed just at the time of putting the new one in the hive, the reception might not be always satisfactory. If I understand you correctly, the whole frame is caged in, in which case there would be no harm in leaving it in the cage for two or three days, making sure of success.

2. Lack of air was the prime trouble, aggravated by the heat, and probably to some extent by the moisture.

Queens Going Out in the Spring.

It is a fact that occasionally the queen-bee goes out in the spring. I distinctly remember having once seen one which alighted on my hand while I was engaged watching the bees of a certain hive bring pollen on a very warm day of April. Another day I saw a queen returning home; I think it was in May, during fruit-bloom. But in neither case did I remark anything abnormal in her majesty, nor did I think of examining the hives to find out whether or not there were two queens in the same hive. Both queens looked very bright and young.

1. What was the reason of their coming out so early?
2. Is this a common occurrence?

3. Should it not discourage the early clipping of queen's wings? For if she is not clipped, she is likely to be lost every time she goes out alone.

4. Would not this account for the fact that several colonies which had a queen in March are found without one in May?

5. And while I am at it, don't you think that it is useless, to say the least, to clip queens' wings in the home apiary? Since the prime swarm which has the old queen, always alights on low branches and near the hive.

CANADA.

ANSWERS.—1. I don't know, but if you will allow me the privilege of guessing I should guess that the queens you mention were virgins out on their wedding excursions.

2. It is not a common occurrence so far north as Canada, to see a queen flying in April.

3. I hardly think so. Of course it would be a bad thing to clip a virgin queen in any case, but it is hardly to be supposed that any one with even a very little experience would make such a mistake. I have known a laying queen to fly out in spring occasionally, but always with the intention of deserting the hive, as with an absconding swarm, in which case the advantages and disadvantages of clipped wings would be the same as any swarm. That a laying

queen ever leaves the hive alone I very much doubt, although I do not know positively that such a thing never happened.

4. Yes, if such a thing as a laying queen leaving the hive alone ever happened. But are there not just as many queens missing in May in apiaries where there are no clipped queens, as in those where all the queens are clipped?

5. I don't see why it is not just as necessary in the home apiary as in an out-apiary, for swarms would be likely to alight in the same kind of places in one as in the other. If your prime swarms always alight on low branches and near the hive they are better trained than mine.

A Wire-Cloth Bee-Veil.

I wish to say a good word in favor of a bee-veil which I see recommended in foreign papers. It is made of wire-cloth, oval, such as are used to protect dishes of fruit against flies. A piece of cotton-cloth is sewed all around to protect the head and neck of the apiarist. In very hot days this veil is much more cool and comfortable, in my opinion and practice, than any other veil of tulle or silk, and, besides, insures an almost perfect vision. Of course a straw hat can be worn over it just the same.

This oval must be of a size a little larger than one's face (about a foot across), and need not cost more than 25 cents in any place. If kept dry it might last for about 3 or 4 years; but sweating or rain may cause it to rust rapidly.

I wonder why no one seems to know or suspect the comfortableness of this wire-cloth veil.

CANADA.

ANSWER.—I have one of the veils you mention, and although I have not used it very much I have hardly thought it as good as other veils without the wire-cloth. Moreover, if I am not mistaken, some one (I think it was M. M. Baldridge) reported having his eyes seriously injured by a wire-cloth veil. If you have used one for considerable time, and it has been entirely satisfactory, it is possible that yours is of a superior quality.

Rendering Comb into Wax—Foul Brood, Etc.

1. I have burr-combs, cappings and some old combs. How can I get good wax from this without buying a solar extractor?

2. Can you give a reliable method of getting candied honey out of sections so they may be used again?

3. How can I detect foul-brood for sure?

4. What is your plan for treating foul-brood?

5. Do you use Doolittle's plans for building up weak colonies?

6. What is your opinion of most of the dollar queens? A bee-keeper told me he had never seen one whose bees were not very cross.

7. I use Hoffman self-spacing frames. Would you cut burr-combs off, or will it do no good?

ILLINOIS.

ANSWERS.—1. Get a steam wax-press, which will get more wax than the solar extractor. But it costs more than the solar. Take an old dripping pan and split open one corner to the bottom. Lay in it your old combs, but not one on top of another. Put the pan in the oven of the cook-stove with the split corner projecting out over a dish set on the floor to catch the wax. Put some thing under the corner which is

diagonally under the split corner, so the wax will run down hill to get out.

2. Let the bees clean it out, sprinkling with water as often as needed.

3. Pages have been written upon the subject in back numbers of this journal, and Howard's little book gives full information that could not possibly be given in this department, which has its limitations. The one symptom that may perhaps be relied upon more than any other is the elastic springing back of the matter in the cell when it is drawn out half an inch or more.

4. I never have been so unfortunate as to have any to treat. If I should ever become so unfortunate I should rely upon the McEvoy treatment as given in Howard's book.

5. I seldom have occasion to use it, for as a general rule my bees of their own accord have all the brood they can cover.

6. A dollar queen may be one of the best in the world, and it may be one of the poorest. It depends upon the stock from which it is reared, and the way in which it is reared. I know of no reason why such queens should differ in disposition from others.

7. If you clean off the burr-combs they will in time be replaced; but they will not be so bad as if they had never been cleaned off.

Storing and Caring for Honey.

1. In the storing and caring for honey, the greatest pest I have to deal with is the wax-moth. Do you recommend bi-sulphide of carbon as sure death to them? Please give the amount necessary to fumigate properly 100 one-pound boxes?

2. Would it be best, or desirable, to store the same in water-tight tin-lined boxes in which they were fumigated, with the finest window-screen wire over box as cover, which would seemingly be necessary as giving a reasonable amount of air for the proper ripening? Would moths get through this wire?

We small producers of honey living in villages and keeping only a few colonies cannot afford an up-to-date honey-house, for the storage of our honey through the ripening process, therefore I bother you with this (to us) perplexing question.

MASSACHUSETTS.

ANSWERS.—1. Three or four tablespoonfuls will probably be abundant.

2. Now, look here, my good friend, you sit down till I talk with you. You have an exaggerated idea of the requirements for comb honey, and you are proposing to go into an expense that I couldn't possibly stand. Don't think of water-tight, tin-lined boxes. Instead of something air-tight, you need something airy. I don't try to keep the moth away from my comb honey after it is taken from the hive. The only danger from the moth, so far as section honey is concerned, where I live, is from the eggs that are laid before the honey leaves the care of the bees. If the larvae are killed, no fresh eggs are laid in the sections, although there is nothing to hinder moths from coming into the room through cracks and crevices. If you have only 100 sections or so, keep them on an upper shelf of a kitchen cupboard. Perhaps better still, keep them in a hot garret next the roof. After getting a summer's roasting there, they will stand the winter's freezing all right.

EARN A BICYCLE
distributing 1000 catalogs for us in your town. Agents can make money fast on our wonderful 1902 offers.
1902 Models, \$9 to \$15
1900 & '01 Models, high grade, \$7 to \$11
500 Second-hand Wheels
all makes and models, good as new, \$3 to \$8. Great Factory Clearing Sale at half factory cost.
We **SHIP ON APPROVAL** and **10 DAYS TRIAL** to anyone in U.S. or Canada without a cent in advance.
Write at once for net prices and special offer to agents. Tires, equipment and sundries, all kinds, half regular prices.
MEAD CYCLE CO. Dept. 857 N CHICAGO, ILL.

1902—Bee-Keepers' Supplies!
We can furnish you with The A. L. Root Co.'s goods at wholesale or retail at their prices. We can pay you freight, and ship promptly. Market price paid for beeswax. Send for our 1902 catalog.
M. H. HUNT & SON, Bell Branch, Wayne Co., Mich.

Tennessee Queens



Send for circular.

JOHN M. DAVIS,
SPRING HILL, TENN.
Please mention Bee Journal when writing.

Dittmer's Foundation!

Retail—Wholesale—Jobbing.

I use a PROCESS that produces EVERY ESSENTIAL necessary to make it the BEST and MOST desirable in all respects. My PROCESS and AUTOMATIC MACHINES are my own inventions, which enable me to SELL FOUNDATION and

Work Wax Into Foundation For Cash
at prices that are the lowest. Catalog giving

Full Line of Supplies,

with prices and samples, free on application BEESWAX WANTED.

GUS. DITTMER, Augusta, Wis.
Please mention Bee Journal when writing.

QUEENS!

Buy them of H. G. QUIRIN, the largest Queen-Breeder in the North.

The A. I. Root Company tell us our stock is extra-fine; Editor York, of the American Bee Journal, says he has good reports from our stock from time to time; while J. L. Gandy, of Humboldt, Nebr., has secured over 400 pounds of honey (mostly comb) from single colonies containing our queens.

We have files of testimonials similar to the above.

Our Breeders originated from the highest-priced, Long-Tongued Red Clover Queens in the United States.

Fine Queens, promptness, and square dealing, have built up our present business, which was established in 1888.

Prices of GOLDEN and LEATHER-COLORED QUEENS, before July 1st:

	1	6	12
Selected, Warranted.....	\$1.00	\$5.00	\$9.50
Tested.....	1.50	8.00	15.00
Selected Tested.....	2.00	10.50	
Extra Selected Tested, the best that money can buy..	4.00		

We guarantee safe arrival, to any State, continental island, or any European country. Can fill all orders promptly, as we expect to keep 300 to 500 Queens on hand ahead of orders. Special price on 50 or 100. Free Circular. Address all orders to

Quirin the Queen-Breeder,

PARKERTOWN, OHIO.

[Parkertown is a P. O. Money Order office.]
15A.26t Please mention the Bee Journal.

The Rural Californian

Tells all about Bees in California. The yields and Price of Honey; the Pasturage and Nectar-Producing Plants; the Bee-Ranches and how they are conducted. In fact the entire field is fully covered by an expert bee-man. Besides this the paper also tells you all about California Agriculture and Horticulture. \$1.00 per year; 6 months, 50 cents. Sample copies, 10 cents.

THE RURAL CALIFORNIAN,
218 North Main Street, - LOS ANGELES, CAL.
Please mention Bee Journal when writing

The American Poultry Journal

325 Dearborn Street, CHICAGO, ILL.

A Journal that is over a quarter of a century old and is still growing must possess intrinsic merit of its own, and its field must be a valuable one. Such is the

American Poultry Journal.
50 cents a Year. Mention the Bee Journal.

Danzenbaker Hives.

In flat and made up—at very low price. 50Ctf
O. C. MASTIN, TRENT, S. D.
Please mention Bee Journal when writing

BARNES' FOOT POWER MACHINERY

Read what J. L. PARENT, of Charlton, N. Y., says: "We cut with one of your Combined Machines, last winter, 50 chaff hives with 7-in. cap, 100 honey racks, 500 brood-frames, 2,000 honey boxes, and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make, and we expect to do it with this Saw. It will do all you say it will." Catalog and price-list free.

Address, W. F. & JOHN BARNES,
995 Ruby St., Rockford, Ill.

Please mention Bee Journal when writing

Second-Hand Hives.

Nearly as good as new, some of them never used. Made by G. B. Lewis Co. Three styles. Well made and painted. About one-half factory prices.

H. H. PORTER,

23A.1t R. D. No. 1, BARABOO, WIS.
Please mention Bee Journal when writing

To make cows pay, use Sharples Cream Separators. Book Business Dairying & Cat. 212 free. W. Chester, Pa.



Orange-Bloom Crop Good.

The honey crop from orange-bloom is excellent in quantity and quality in this vicinity. The sage crop is doubtful yet.

FRANK MCNAY.

San Bernardino Co., Calif., May 19.

Bee-Keepers Stand the Stings.

MR. EDITOR:—On page 332 is given a cure for stings—five minutes pressure with a half-dollar on the affected part. You suggest that bankers can use 20-dollar gold pieces. That might be a little expensive, but the most expensive part of the performance is that "five minutes." For a dozen stings that would take just an hour. Can a bee-keeper not better afford to stand the pain than to take so much time in the rush of the season?

C. O. WARD.

Country Not What It Was for Bees.

The bees are not gathering any honey now. I am feeding mine. Some are starving, I learn.

We always have a moderate flow during cotton-blooming time, which is from the middle of July until frost.

Our country is not what it once was for bees. All the land is in cultivation, hence scarcely any wild flowers, and the farmers all plant cotton to the exclusion of almost everything else, so we do not count on our bees making more than a living, until after cotton begins to bloom. Horsemint in the pastures generally furnishes some nectar, but it is a failure this year on account of its not coming up for some unaccountable reason this spring.

A. B. COX, M. D.

Fannin Co., Tex., May 16.

Bees in Kansas.

Bees did poorly last winter, but increased rapidly during fruit-bloom. They are at work upon alsike clover. Alfalfa will bloom in about 15 days, but the bees will not be strong enough to benefit by it much.

LESLIE HAZEN.

Nemaha Co., Kans., May 18.

Spraying While in Bloom.

I have had an experience with some of Wm. Stahl's work. I had 35 good colonies in an out-yard 6 miles from here, and the man where I had the bees got one of Stahl's sprayers and followed his directions and sprayed his plum-trees in full bloom, and, of course, the bees got it. Over half of the bees are dead, and also open brood. It is a big loss to me. The man that sprayed feels badly about it; he did not mean to hurt the bees. I was lucky in getting there in time to prevent him from spraying his apple-trees; he was going to do it the next day.

Now, I think Mr. Stahl might put in his directions that spraying trees in full bloom will also poison the bees. There has never been any spraying done here before, and this is something never thought of here.

DANIEL DANIELSEN.

Turner Co., So. Dak., May 5.

The Honey Prospect in California.

Thinking perhaps the readers of the American Bee Journal would be somewhat interested in a report from this dry country, and knowing how eager the honey-buyers are to get exaggerated reports started in the East in regard to the big crops of honey of Southern California, I thought I would give a few facts in regard to the present prospect.

I have 115 colonies in No. 1 condition, which ought to be storing at least a ton of

To make cows pay, use Sharples Cream Separators. Book Business Dairying & Cat. 212 free. W. Chester, Pa.

An Italian Queen Free!



We would like to have our regular subscribers (who best know the value of the American Bee Journal) to work for us in getting NEW subscribers. We do not ask them to work for us for nothing, but wish to say that we will mail ONE FINE UNTESTED ITALIAN QUEEN for sending us ONE NEW subscriber for a year, with \$1.00; or 2 Queens for sending 2 new subscribers, etc. Remember, this offer is made only to those who are now getting the Bee Journal regularly, and whose subscriptions are fully paid up.

In case you cannot secure the new subscribers, we will mail one of these Queens for 75 cts., or 3 or more at 70 cts. each; or the Bee Journal one year and a Queen for \$1.50. We expect to be able to send them almost by return mail.

(Please do not get these offers mixed up with our Red Clover Queen offers on another page.)

GEORGE W. YORK & CO.,
144 & 146 Erie Street, - CHICAGO, ILL.

DO YOU READ

THE

Modern Farmer

If not, why not? You get it a whole year for 25 cents. Your money back, if not satisfied. Sample Copy Free. Get two of your farmer friends to take it a year, send us 50 cents, and get yours free. Send their names for samples. Address,

MODERN FARMER,

9Ctf ST. JOSEPH, MO.

\$5

TO START YOU IN BUSINESS
We will present you with the first \$5 you take in to start you in a good paying business. Send 10 cents for full line of samples and directions how to begin.

DRAPER PUBLISHING CO., Chicago, Ills.

Please mention Bee Journal when writing

SARATOGA EXCURSION

June 5, 6, 8 and 9, at the rate of \$19.45 for the round trip. Final return limit July 2, 1902, via Nickel Plate Road. Three daily trains to New York and Boston. City Ticket Office 111 Adams St., Chicago. Phone, Central 2057
19-23Alt

PAGE

We Have To Use

High-Carbon, Double Strength Wire in the PAGE in order to maintain the coil spring shape.

PAGE WOVEN WIRE FENCE CO., ADRIAN, MICH.

Please mention Bee Journal when writing

Bees For Sale.

75 colonies in Improved Dovetailed Hives, in lots to suit purchaser.

O. H. HYATT,

13Atf SHENANDOAH, Page Co., IOWA.

Please mention Bee Journal when writing

A FEW CENTS

invested at the right time in Watkins' Remedies will not only
SAVE YOU A HUNDRED TIMES
 as much in doctors' bills, but also the danger and suffering caused by the tedious delay in the doctor's coming.

WATKINS' REMEDIES

are nothing new. They have stood the test of time, having been on the market for over forty years. They are always effective, always ready to use, no delay, no unnecessary suffering, no expense to speak of. Only prompt, pleasant, permanent relief to man and beast.

BEWARE of Imitations. Watkins' Remedies are sold through our traveling salesmen in the country, and are known by the picture and signature of J. R. Watkins on every wrapper and label as follows:



If our agent has not yet called on you, or if we have no agent in your county, kindly send us your name and address, and we will see that you are promptly supplied.

-- FREE TO ALL --

Your name and address on a postal card will bring you a copy of Watkins' Home Doctor and Cook Book, a fully illustrated 100 page book, containing weather forecasts, fine cooking recipes and much valuable and interesting information for old and young. The finest book of the kind ever published. Write for it to-day.

The J. R. Watkins Medical Co.

10 Liberty St., WINDOM, MINN., U. S. A.

T.B.W.-

Queens Now Ready to Supply by Return Mail

Stock which cannot be excelled. Each variety bred in separate apiaries, from selected mothers; have proven their qualities as great honey-gatherers.

Golden Italians

Have no superior, and few equals. Untested, 75 cents; 6 for \$4.00.

Red Clover Queens,

which left all records behind in honey-gathering. Untested, \$1.00; 6 for \$5.00.

Carniolans

—They are so highly recommended, being more gentle than all others. Untested, \$1.00.

ROOT'S GOODS AT ROOT'S FACTORY PRICES.

C. H. W. WEBER,

2146-2148 Central Avenue,
CINCINNATI, OHIO.

(Successor to Chas. F. Muth and A. Muth.)

29 YEARS SELLING DIRECT.

We are the largest manufacturers of vehicles and harness in the world selling to consumers, and we have been doing business in this way for 29 years.

WE HAVE NO AGENTS

but ship anywhere for examination guaranteeing safe delivery. You are out nothing if not satisfied. We make 195 styles of vehicles and 65 styles of harness. Our prices represent the cost of material and making, plus one profit. Our large free catalogue shows complete line. Send for it.

No. 212½ Jump Seat Trap. Price, \$80. As fine as sells for \$10 to \$50 more.

Elkhart Carriage & Harness Manufacturing Co., Elkhart, Ind.



No. 152 Top Buggy has ½ Inch Kelly rubber tires and rubber covered steps. Price, \$15.00. As good as sells for \$40.00 more.

honey every week. But not a pound of nectar is coming in. Honey-plants look fine—bloom in abundance, but nothing in them for the bees. The same condition prevails throughout this part of the country.

One good, heavy rain would save the crop, but it is too late to look for it now.

I think perhaps the middle part of the State will produce some honey, as they got more rain than we did. Very little, if any, surplus will be produced in the southern part.

So, together with foul brood, dry year, and low prices for honey, bee-keepers here are having a pretty hard time of it.

Not a swarm has been cast this spring from my whole apiary.

But in order to show you what can be accomplished here in a good year I will give you a report of what I did with 9 colonies, which were mostly cared for by my son, Lee, who is now only 16 years of age:

The last of October, 1900, I bought 9 colonies in double Simplicity hives. October 1, 1901, I had built them up to 72 good, strong colonies, and had sold just \$200 worth of comb honey from them. I increased by rearing queens and dividing.

In Michigan I always got some honey every year that I kept bees, but I have been in the business here eight years, having as high as 240 colonies, and have had only three crops of honey.

B. S. TAYLOR.

Riverside Co., Calif., May 14.

Rearing Long-Lived Worker-Bees.

MR. EDITOR:—On page 331, Geo. W. Riker explains what he means by poorest queens, an explanation that is hardly needed, but does not throw any additional light. Will he kindly tell us his plan of procedure by which from a queen "whose workers are short-lived so their colonies are always weak" he succeeds in rearing queens that produce long-lived workers?

SUBSCRIBER.

[Mr. Riker is invited to send a satisfactory answer to the above question if he really knows it.—EDITOR.]

A Report—Bees Selecting a Home Before Swarming.

I came through the past winter with 27 colonies in fair condition; they are almost all blacks.

The last winter was a hard one on me, as I was laid up all winter with sciatica, but I am out again, and have "dressed" my bees, or cleaned house for them.

It was the longest and most severe winter for 25 years. I kept a record of the snowfall, as my family and neighbors gave it to me, and I find we had over 150 inches of snow. April and May, until the 15th, was very cool, dry and windy, making a very hard spring on bees as well as the farmer.

I am a farmer, and keep a few colonies of bees for profit. I harvested about 40 pounds per colony the fall of 1901. I sold it in the

ELECTRIC FOR STRENGTH

You are through with wagon worry forever when you buy one of our

HANDY WAGONS.

They carry 4000 lbs. and do it easily, and don't cost a fortune either. Write for the free catalogue. It tells all about this wagon and the famous Electric Wheels.

ELECTRIC WHEEL CO., BOX 16, QUINCY, ILLINOIS.

\$19.45 to Saratoga and Return \$19.45

via Nickel Plate Road, to leave June 5, 6, 8 and 9, open return limit until June 17, 1902. By depositing ticket with Agent, Terminal Lines, on or before June 17th, and payment fee of 50 cents, an extension until July 2, 1902, may be obtained. City Ticket Office, 111 Adams St., Chicago. Phone, Central 2057.

18-23A1

Please mention Bee Journal when writing advertisers.

Bee-Keepers—Attention!

Do not put your money into New Fangled Bee-Hives, but buy a plain, serviceable and well-made hive, such as the regular Dovetailed hive arranged for bee-way sections. Honey-producers of Colorado—one of the largest honey-producing sections in the world—use this style.

Thousands of Hives, Millions of Sections, ready for Prompt Shipment.

G. B. LEWIS CO., Watertown, Wis.

Please mention Bee Journal when writing.

28 cents Cash paid for Beeswax. *

low, upon its receipt, or 30 cents in trade. Impure wax not taken at any price.

Address as follows, very plainly,

GEORGE W. YORK & CO., 144 & 146 Erie St., Chicago, Ill.

Marshfield Manufacturing Company.

Our specialty is making **SECTIONS**, and they are the best in the market. Wisconsin BASSWOOD is the right kind for them. We have a full line of **BEESUPPLIES**. Write for free illustrated catalog and price-list.

Marshfield Manufacturing Company, Marshfield, Wis.

7A26 Please mention Bee Journal when writing.

**BINGHAM'S PATENT
Smokers**
24 years the best.
Send for Circular.
25A1f T. F. BINGHAM, Farwell, Mich.

Christian Scientists'

meeting in Boston June 15th to 18th. It will be to your advantage to obtain rates applying over the Nickel Plate Road before purchasing elsewhere. Tickets on sale June 12th, 13th and 14th. Final limit returning, July 31st. Call on or address John Y. Calahan, General Agent, 111 Adams St., Chicago, 10—23A2t

BOYS WE WANT WORKERS
Boys, Girls, old and young alike,
make money working for us.
We furnish capital to start you in busi-
ness. Send us 10c stamp or silver for full instructions and a line of
samples to work with. LAPER PUBLISHING CO., Chicago, Ill.

Adel Queens and Bees

The standard strain of yellow-banded bees.
All select-tested Queens. Each, \$1.00. Ready
to mail June 1. Cat. free.

**HENRY ALLEY,
WENHAM, MASS.**

22A4t Please mention Bee Journal when writing

The "MUTH'S SPECIAL"

that is ABSOLUTELY WARP-PROOF, therefore the best dovetail Hive on the market. Our illustrated catalog explains it all. You can have one by asking. We sell the finest Supplies at manufacturer's prices.

Standard Bred Queens. None better than our BUCK-EYE STRAIN of 3-Banders and "MUTH'S STRAIN GOLDEN ITALIANS," by return mail. 75c each; 6 for \$4.00. Safe arrival guaranteed.

THE FRED W. MUTH CO., Front and Walnut Sts., CINCINNATI, OHIO.
Please mention Bee Journal when writing.

Fancy Glassed Comb Honey

Any bee-keepers in New York or Pennsylvania producing either White Clover or Raspberry Fancy Comb Honey (in glassed sections), will find it to their interest to write to the undersigned at once.

**GEORGE W. YORK & CO.,
144 & 146 Erie Street, CHICAGO, ILL.**

Please Mention the Bee Journal when writing
Advertisers *****

home market, the dark at 12½ cents, and the white or basswood honey at 15 cents per pound, cash.

I am also trying the cultivation of ginseng as a side-issue. I have about 1500 plants growing nicely under lattice or paling.

I wish to give my opinion and experience about bees selecting their future home before swarming, as I have read a good deal in the bee-papers in the past on this subject.

I think once in a great while they do select their home before they swarm, but probably not more than one time in a thousand, as only three cases of seeking their future home have come under my immediate notice in 50 years. So I will give you one as a sample:

Some years ago an uncle of mine had a few colonies of bees; late in June they showed signs of going to swarm, by lying outside of the hive. One Friday he was out in the woods above the house and found bees working nicely in a small white-oak tree, going in a knot-hole up about 40 feet. He bragged a good deal about his "find." On the following Sunday several of the neighbors and I were there for dinner. Just after dinner one colony swarmed; everybody present got a bell, tin pan or something that would rattle, and joined the band, but all to no purpose, they wouldn't or didn't settle at all. So after circling in the air awhile they struck for the woods, all the men and boys after them. They went up where uncle had found his bee-tree, and plugged right in. Great excitement now prevailed, all thinking there would be a big bee-fight, so ax and hatchets were hastily got to cut the bee-tree and try to divide the bees and save them. When the tree fell and was cut open where the bees were, all were surprised again, as there was not a speck of comb built or anything done in the line of work, except the hollow seemed to have been cleaned out nicely. We got the bees in an old box, took them back home that evening, and all seemed satisfied and contented.

I know of two other cases like this one; it proves to me that once in a great while they do look out for their future home.

Do bees gather honey or pollen from white-oak bloom at this time, May 18? Bees seem to be bringing in lots of pollen and some honey. The white-oak is in full bloom.

IRA SHOCKEY,
Randolph Co., W. Va., May 18.

Hard Country for Wintering.

This is a hard country in which to winter bees, for the mild temperature of the Willamette Valley causes them to eat a good deal in winter.

Many bees died since last fall, partly owing to disease, I think.

CLARK S. FUGE.

Clackamas Co., Oreg., May 13.

A "Greenhorn's" Experience.

I can't remember when I was not fond of honey and bees. A friend gave me a colony of hybrids, June 1, 1900, in a home-made hive. I took from them in the fall 18 pounds of honey. They wintered well out-doors, and cast a swarm June 3, and another June 13, 1901. These I hived in eight-frame hives. I gave the first new swarm, which had the old queen, a super, and later I tiered them up, that is, I gave them another hive-body.

I kept watch of the bees this spring and found the combs in No. 1 crossed so I could not take out the frames, and there were plenty of wax-moths. The queen was laying in No. 2, and the cluster well covered the bottom-board. May 1 I set No. 1 on a new stand, after turning the hive bottom side up and taking out the frames and cutting out the comb and fastening it in new Hoffman frames. In transferring I got rid of some of the moths, and also got straight combs.

On May 12 I received a premium queen, and placed the cage in the hive. In 48 hours I put the queen under a screen-cloth cage on unsealed honey, and cut out five queen-cells. After 24 hours I liberated her, and to-day I found a nice lot of eggs and busy, contented bees.

To-day, May 18, No. 2 gave a large swarm. My other colonies are working in supers, and

I expect they will swarm soon. I have five good colonies now; a year ago I had one.

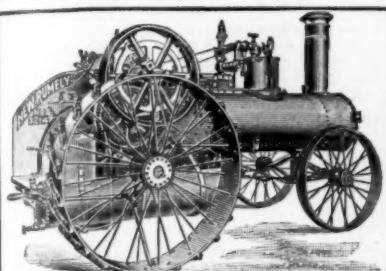
If all the bee-keepers knew how much better foundation is fastened by electricity they would never use a roller. If you would appreciate it I can describe how I do it with an outfit that anybody can use.

There is nothing better than the American Bee Journal for a beginner.

F. H. DRAKE.

Worcester Co., Mass., May 18.

[Yes, we would be pleased to publish your way of fastening comb foundation in brood-frames.—EDITOR.]



RUMELY

Rear Gear to the Fore.

This Traction Engine should receive the attention of all threshers. Investigate. Modern in every part. Has all latest devices and appliances. Perfect in traction, unsurpassed in generating and supplying power. A full line of general and special purpose engines. Generators should interest you. The New Rumely is what you want. It threshes it all, cleans it all, saves it all. Catalog sent free.

M. RUMELY CO., La Porte, Ind.

To Boston and Return at One Fare for the round-trip via Nickel Plate Road, for Christian Scientists' meeting in June. Tickets on sale June 12th to 14th, inclusive, with extended return limit of July 31st. Write John Y. Calahan, General Agent, 111 Adams St., Chicago, for detailed information. 9-23A2t

DAIRYMEN ARE DELIGHTED
to meet those who work for us. Cow keepers always have money. We start you in business. You make large profits. Easy work. We furnish capital. Send 10 cents for full line of samples and particulars.

DRAPER PUBLISHING CO., Chicago, Ills.
Please mention Bee Journal when writing.

Wanted Comb and Extracted Honey!
State price, kind and quantity.

R. A. BURNETT & CO., 199 S. Water St., CHICAGO
33Atf Please mention the Bee Journal.

3-Frame Nuclei For Sale.

We have arranged with a bee-keeper located in Kankakee Co., Ill., (within 12 miles of Kankakee), to fill orders for Nuclei of bees. All are to be first-class, and most of the bees show Italian markings. The queens in the Nuclei will be Italian, of this year's rearing.

The Nuclei are 3-frame Langstroth, in light shipping-boxes. Prices: 1 for \$3.00; 5 or more at \$2.75 each.

All are f.o.b. shipping-point, and will be sent by express, a postal card notice being mailed to each purchaser a day or two before shipping the bees.

GEORGE W. YORK & CO.,
144 & 146 Erie St., - CHICAGO, ILL.

Please mention Bee Journal when writing Advertisers.

SWEET CLOVER

And Several Other Clover Seeds.

We have made arrangements so that we can furnish Seed of several of the Clovers by freight or express, at the following prices, cash with the order:

	5lb	10lb	25lb	50lb
Sweet Clover (white)....	\$.75	\$1.40	\$3.25	\$6.00
Sweet Clover (yellow)....	.90	1.70	4.00	7.50
Alike Clover	1.00	1.80	4.25	8.00
White Clover	1.00	1.90	4.50	8.50
Alfalfa Clover80	1.40	3.25	6.00

Prices subject to market changes.

Single pound 5 cents more than the 5-pound rate, and 10 cents extra for postage and sack.

Add 25 cents to your order, for cartage, if wanted by freight, or 10 cents per pound if wanted by mail.

GEORGE W. YORK & CO.
144 & 146 Erie Street, - CHICAGO, ILL.

Queens you should Have

Does blood tell in other stock? Give your bees a chance. Stock used for breeding the queens offered—not from a sport, but my pick out of an apiary giving last season an average yield as follows:

Honey-Gathering.

102 lbs. extracted and 68 lbs. comb honey per colony besides increase and stores for winter.

Quality of Comb-Honey Produced.

"Man! It would dazzle you."—Wm. Envoy, Ontario Government Inspector of Apiaries.

Wintering Qualities.

Up to the present (January 30) I never found these bees to show the least indication of unrest—always perfectly quiet. They are wintering perfectly.—Frank T. Adams, Brantford, Canada.

General Commendation.

Out of those queens you sent me I have produced the best race or strain of bees I ever owned. Remember that is saying a lot, as I have tried every breed imported in this country. The bees winter better, build up, and stand cold chilly winds in spring better, and are more suitable than any bees I ever owned. For the season they gave me about double the honey the pure Italians did, and more increase. Glad you are going into the queen-business, and are going to join the ranks again. We are much in want of a few men like you. C. W. Post, Ex-president Ontario Bee-keepers' Association (owns 365 colonies).

S. T. Pettit, Canada's most successful comb-honey producer and bee-keeper, says: "The blood in my apiary is largely the progeny of queens sent by you, and they are grand bees."

Prices of Queens.

They are duty free to the United States. Tested, \$2.00 each; \$10.00 for 6; \$18.00 per dozen. Untested until July 1, \$1.25 each; \$7.00 for 6; or \$12.00 per dozen. Same after July 1st, \$1.00 each; \$5.50 for 6; or \$10.00 per dozen. Larger quantities, prices on application. Postage stamps taken for fractions of a dollar. To be fair to everyone, no selected tested queens are offered. Every one has the same chance. The above queens are bred from a careful selection of Italians and Carniolans. Pure Italian and Carniolan queens same price. Price of full colonies on application. Orders booked as received, and filled as quickly as possible. Order early.

Address, R. F. HOLTERMANN,
Bow Park Co., Limited, Brantford, Ont., Canada
9D8t Please mention the Bee Journal.

Our Choice for honey-gatherers is a cross between the Italian and Carniolan. A limited number of Nuclei and full colonies for sale. Healthy, vigorous, and excellent workers. Address, E. S. ROE, CLARISSA, TODD CO., MINN.

California! If you care to know of its Fruits, Flowers, Climate or Resources, send for a sample copy of California's Favorite Paper—

The Pacific Rural Press,

The leading Horticultural and Agricultural paper of the Pacific Coast. Published weekly, handsomely illustrated, \$2.00 per annum. Sample copy free.

PACIFIC RURAL PRESS,
330 Market Street, - SAN FRANCISCO, CAL.

HONEY AND BEESWAX

MARKET QUOTATIONS.

CHICAGO, May 19.—The market is without special change from that prevailing early in the month, with perhaps less doing than was noticed at that time. White comb honey sells in a small way at 14@15c for fancy, if white clover and basswood; other kinds at 12@13c; ambers of all grades and flavors are dull at 8@10c. Extracted unusually quiet with white ranging from 5@6@; ambers, 5@5@; dark, 4@5c. Beeswax still active at 32c.

R. A. BURNETT & CO.

CINCINNATI, March 6.—The market in extracted honey is good with prices lower. Amber, for manufacturing purposes, brings from 5@6@; better grades from 7@8c. Fancy comb honey sells at 16c; lower grades hard to sell at any price. Beeswax strong at 27@30c.

THE FRED W. MUTH CO.

ALBANY, N.Y., May 1.—Honey market is dull. Very little call now for any grade. Well cleaned out of stock and season practically over. Some comb honey is selling at 14@15c. Extracted, 6@6@. Beeswax, good demand, 30@31c.

H. R. WRIGHT.

BOSTON, March 20.—The demand for comb honey remains good. Market ranges as follows: Fancy white, in cartons, 15@16c; A No. 1, 14@15c; No. 1, 13@14c; honey in glass-front cases about one cent less. Extracted, California light amber, 7@7@; Florida honey, in barrels, 6@6@. Beeswax, 29@30c. M. H. HUNT & SON.

BLAKE, SCOTT & LEE.

Detroit, Apr. 8.—Fancy white comb honey, 15c; No. 1, 13@14c; dark and amber, 11@12c. Extracted, white, 6@7c; dark and amber, 5@6c. Beeswax, 29@30c. M. H. HUNT & SON.

CINCINNATI, May 8.—As the warm weather set in, the demand for comb honey is as good as over. There are no settled prices; for whatever is left, prices are made to force sales. Extracted honey is in fair demand and finds steady sales. Amber is sold in barrel lots for 5@5@; water-white alfalfa, sells from 6@6@; and white clover brings from 6@7c. Beeswax scarce and brings 30@31c. C. H. W. WEBER.

NEW YORK, May 19.—There is a limited demand for comb honey and prices range as follows: Fancy white, 14c; No. 1, white, 13c; amber, 11@12c; no buckwheat or dark on the market and no more demand for any. Market on extracted remains very inactive. Plenty of supply with only fair demand. We quote: white, 5@5@; light amber, 5@5@; southern, in barrels, 50@55c gallon. Beeswax firm at from 30@32c pound, according to quality.

HILDRETH & SEGELEN.

SAN FRANCISCO, May 14.—White comb, 10@12@ cents; amber, 7@10c; dark, 6@7 cents. Extracted, white, 5@—; light amber, 4@—; amber, 4@—. Beeswax, good to choice, light, 26@28c; dark, 24@25c.

Spot stocks are not of heavy volume, but there is more offering than can be accommodated with prompt custom at full current rates. Business now doing is mostly of a light jobbing character on local account.

WANTED!

Honey and Beeswax. Mail sample and state price delivered Cincinnati. C. H. W. WEBER, 2146-2148 Central Ave., CINCINNATI, OHIO.

21Atf Mention the American Bee Journal.



SHEEP MONEY is good MONEY if you work for us. We will start you in business and furnish the capital. Work light and easy. Send 10 cents for full line of samples and particulars.

DRAPER PUBLISHING CO., Chicago, Ills.

Please mention Bee Journal when writing.

BEE-SUPPLIES!

TROT'S GOODS AT ROOT'S PRICES.

Everything used by bee-keepers. POUDER'S HONEY-JARS. Prompt service. Low Freight Rates. NEW CATALOG FREE.

WALTER S. POUDER.
512 MASS. AVE. INDIANAPOLIS, IND.

BEE-KEEPERS,
Save Money by Buying
Hives, Sections, Brood
Frames, Extractors,
Smokers, AND EVERYTHING
ELSE YOU NEED, OF

THE W. T. FALCONER MFG. CO.,
Jamestown, N. Y.

Our goods are guaranteed of super-
ior quality in every way.
Send for our large illustrated catalog,
and copy of

THE AMERICAN BEE-KEEPER,
a monthly for all bee-keepers; 50c a year.
(Now in 12th year. H. E. Hill, Editor.)

W. M. GERRISH, E. Nottingham,
N. H., carries a full line of our goods at
catalog prices. Order of him and save
freight.

Please mention Bee Journal when writing.



\$300,000,000.00 A YEAR
and you may have part of it if you work
for us. Uncle Sam's poultry product pays
that sum. Send 10c for samples and partic-
ulars. We furnish capital to start you in
business. Draper Publishing Co., Chicago, Ill.

Please mention Bee Journal when writing.

\$19.00 to Boston and Return \$19.00
via Nickel Plate Road, account of meet-
ing of Christian Scientists, June 15th
to 18th. Tickets on sale June 12th,
13th and 14th, with open return limit
of June 21st. By depositing tickets
with joint agent in Boston on or before
June 21st, extended limit returning
until July 31st may be obtained. Three
trains daily. Through vestibuled sleep-
ing-cars. American Club Meals served
in dining-cars on Nickel Plate Road;
also meals *a la Carte*. Address John
Y. Calahan, General Agent, 111 Adams
St., Chicago, for reservation of sleep-
ing-car space and other information.
8-23A2t

ITALIAN

Bees and Queens!



Having been 28 years rear-
ing Queens for the trade, on
the best known plans, will
continue to rear the best dur-
ing 1902.

PRICES:

1 Untested Queen	\$1.00
1 Tested Queen	1.35
1 Select Tested Queen	1.50
1 Breeder	2.50
1-Comb Nucleus, no queen	1.40

Write for catalog, giving
prices of Comb Foundation
and prices of Queens by half
doz. and doz. lots.

J. L. STRONG, Clarinda, Page Co., Iowa.
19Dtf Please mention the Bee Journal.

If you want the Bee-Book

That covers the whole Apicultural Field more
completely than any other published,
send \$1.25 to

Prof. A. J. Cook, Claremont, Cal.,
FOR HIS
"Bee-KEEPER'S GUIDE."
Liberal Discounts to the Trade.

FREE FOR A MONTH

If you are interested in Sheep in any way
you cannot afford to be without the best
Sheep Paper published in the United States.

Wool Markets and Sheep

has a hobby which is the sheep-breeder and
his industry, first, foremost and all the time.
Are you interested? Write to-day.

WOOL MARKETS AND SHEEP, CHICAGO, ILL.
Please mention Bee Journal when writing.

25th Year Dadant's Foundation 25th Year

We guarantee Satisfaction. What more can anybody do? BEAUTY,
PURITY, FIRMNESS, No SAGGING,
No LOSS. PATENT WEED-PROCESS SHEETING.

Why does it sell so well? Because it has always given better satis-
faction than any other. Because in 24 years
there have not been any complaints, but thousands of compliments.

Send name for our Catalog, Samples of Foundation and Veil Material.
We sell the best Veils, cotton or silk.

Bee-Keepers' Supplies OF ALL KINDS ***** XX

Very fine pure-bred BARRED PLYMOUTH ROCK Chickens and Eggs
for sale at very low prices.

Langstroth on the Honey-Bee—Revised,

The classic in Bee-Culture—Price, \$1.25, by mail.

BEESWAX wanted
at all times....

CHAS. DADANT & SON,
Hamilton, Hancock Co., Ill.

Please mention Bee Journal when writing.

THE DANZENBAKER HIVE

The best comb-honey hive on the market may be obtained of The A. I. Root Co., of Medina, Ohio; at any of their branch houses, and many of their local and jobbing agencies. Send to the address nearest you, and save freight, and get quick delivery.

Branch Offices.

The A. I. Root Co., 10 Vine St., Philadelphia, Pa.
Wm. A. Selser, Manager.
The A. I. Root Co., - - - - - Syracuse, N. Y.
F. A. Salisbury, Manager.
The A. I. Root Co., - - - - - Mechanic Falls, Me.
J. B. Mason, Manager.
The A. I. Root Co., 1024 Miss St., St. Paul, Minn.
H. G. Acklin, Manager.
The A. I. Root Co., - - - - - San Antonio, Texas.
Toepperwein & Walton, Managers.
The A. I. Root Co., 1200 Md. Av., S. W. Washington.
Saffell & Herrick, Managers.
The A. I. Root Co., San Ignacio 17, Havana, Cuba.
F. H. de Beche, Manager.

Jobbing Agencies.

Geo. W. York & Co., 144 & 146 Erie St., Chicago, Ill.
C. H. W. Weber, - - - - - Cincinnati, Ohio
M. H. Hunt & Son, - - - - - Bell Branch, Mich.
Walter S. Pouder, - - - - - Indianapolis, Ind.
Jos. Nyewander, - - - - - Des Moines, Iowa.
Jno. Nebel & Son, High Hill, Montgomery Co., Mo.
Prothero & Arnold, Du Bois, Clearfield Co., Penn.
Carl F. Buck, - - - - - Augusta, Butler Co., Kan.
W. W. Cary & Son, - - - - - Lyonsville, Mass.
The L. A. Watkins Mdse. Co., - - - - Denver, Colo.

Would you increase your profits? Then try the Danz. Hive. It's used from Maine to California. Read the following:

THE A. I. ROOT COMPANY, Medina, Ohio.

GENTLEMEN—I am VERY, VERY pleased that you are willing I should recommend the Danz. hive. I have had a great many inquiries regarding it and have not felt at liberty to recommend it over our regular hives. At first I was prejudiced against it, but the sales have increased without recommendations, and wherever I have sold them they have bought again and praised the hive with extravagant claims, and I am forced to the conclusion that it is the BEST COMB-HONEY HIVE on the market.

J. B. MASON,
Manager North-eastern Branch The A. I. Root Co.

The above unsolicited testimonial speaks for itself.

M. H. Mendleson, of California, has just ordered 700 Danzenbaker supers. Sales are doubling every year. Still the demand for honey in Danz. sections is greater than the supply. If you are wise you will raise comb honey in Danz. hives.

THE A. I. ROOT CO.,

MEDINA, OHIO, U.S.A.

GEORGE W. YORK & CO., 144 & 146 Erie Street,
CHICAGO, ILL.,
are headquarters for ROOT'S BEE-KEEPERS' SUPPLIES IN CHICAGO. Send to them for
their free Catalog.